APPLETONS' HOME READING BOOKS

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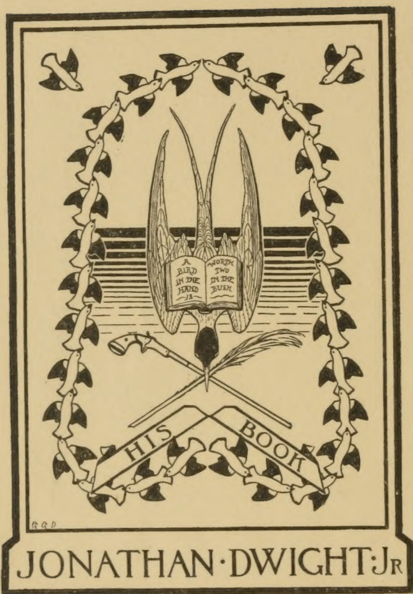
Birds

NEWS FROM THE BIRDS

KEYSER


A BIRD IN THE HAND IS
WORTH TWO IN THE BUSH
HIS BOOK
JONATHAN · DWIGHT · Jr

Appletons' Home Reading Books

EDITED BY

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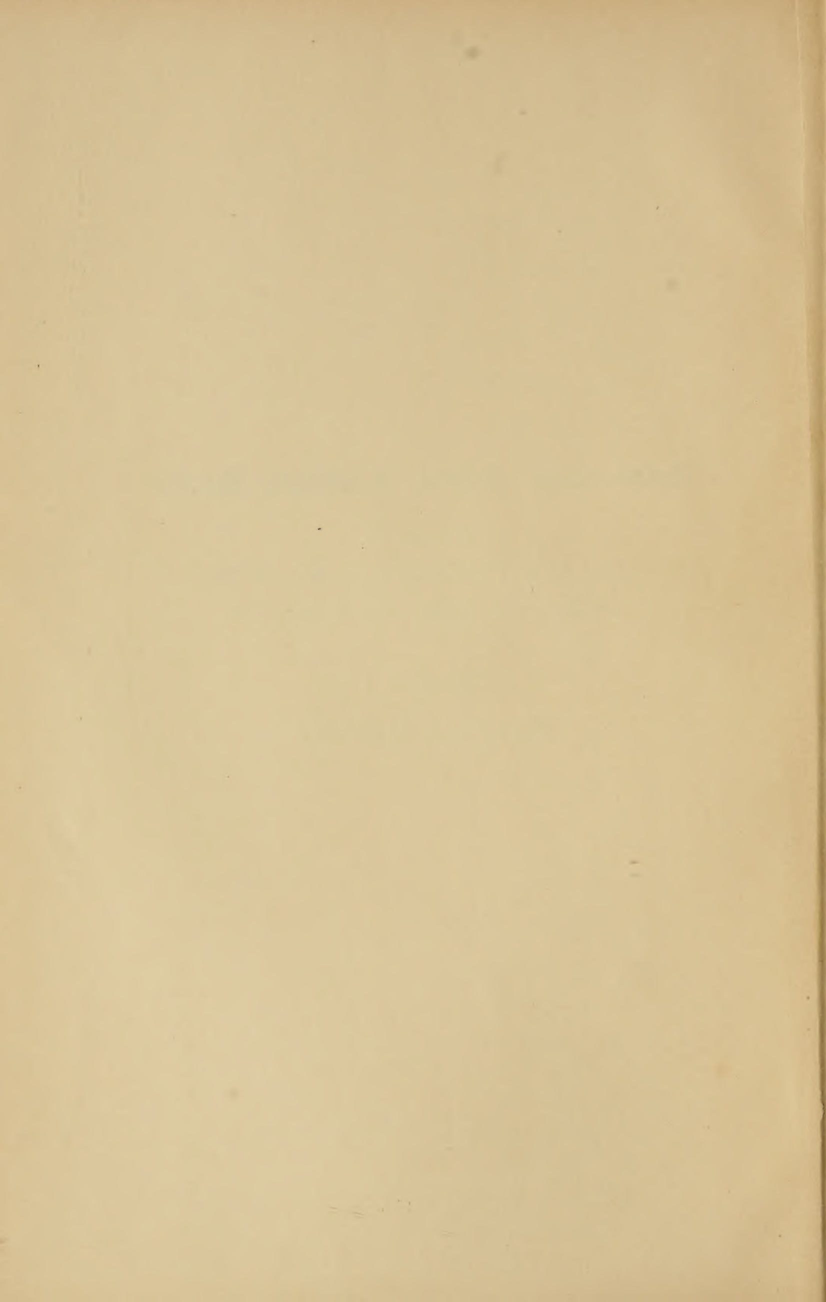
UNITED STATES COMMISSIONER OF EDUCATION

DIVISION I

NATURAL HISTORY



Interviewing the birds.

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APPLETONS' HOME READING BOOKS

NEWS FROM THE BIRDS

BY

LEANDER S. KEYSER

NEW YORK
D. APPLETON AND COMPANY
1898

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INTRODUCTION TO THE HOME READING BOOK SERIES BY THE EDITOR.

THE new education takes two important directions—one of these is toward original observation, requiring the pupil to test and verify what is taught him at school by his own experiments. The information that he learns from books or hears from his teacher's lips must be assimilated by incorporating it with his own experience.

The other direction pointed out by the new education is systematic home reading. It forms a part of school extension of all kinds. The so-called "University Extension" that originated at Cambridge and Oxford has as its chief feature the aid of home reading by lectures and round-table discussions, led or conducted by experts who also lay out the course of reading. The Chautauquan movement in this country prescribes a series of excellent books and furnishes for a goodly number of its readers annual courses of lectures. The teachers' reading circles that exist in many States prescribe the books to be read, and publish some analysis, commentary, or catechism to aid the members.

Home reading, it seems, furnishes the essential basis of this great movement to extend education

beyond the school and to make self-culture a habit of life.

Looking more carefully at the difference between the two directions of the new education we can see what each accomplishes. There is first an effort to train the original powers of the individual and make him self-active, quick at observation, and free in his thinking. Next, the new education endeavors, by the reading of books and the study of the wisdom of the race, to make the child or youth a participator in the results of experience of all mankind.

These two movements may be made antagonistic by poor teaching. The book knowledge, containing as it does the precious lesson of human experience, may be so taught as to bring with it only dead rules of conduct, only dead scraps of information, and no stimulant to original thinking. Its contents may be memorized without being understood. On the other hand, the self-activity of the child may be stimulated at the expense of his social well-being—his originality may be cultivated at the expense of his rationality. If he is taught persistently to have his own way, to trust only his own senses, to cling to his own opinions heedless of the experience of his fellows, he is preparing for an unsuccessful, misanthropic career, and is likely enough to end his life in a madhouse.

It is admitted that a too exclusive study of the knowledge found in books, the knowledge which is aggregated from the experience and thought of other people, may result in loading the mind of the pupil with material which he can not use to advantage.

Some minds are so full of lumber that there is no space left to set up a workshop. The necessity of uniting both of these directions of intellectual activity in the schools is therefore obvious, but we must not, in this place, fall into the error of supposing that it is the oral instruction in school and the personal influence of the teacher alone that excites the pupil to activity. Book instruction is not always dry and theoretical. The very persons who declaim against the book, and praise in such strong terms the self-activity of the pupil and original research, are mostly persons who have received their practical impulse from reading the writings of educational reformers. Very few persons have received an impulse from personal contact with inspiring teachers compared with the number that have been aroused by reading such books as Herbert Spencer's Treatise on Education, Rousseau's Émile, Pestalozzi's Leonard and Gertrude, Francis W. Parker's Talks about Teaching, G. Stanley Hall's Pedagogical Seminary. Think in this connection, too, of the impulse to observation in natural science produced by such books as those of Hugh Miller, Faraday, Tyndall, Huxley, Agassiz, and Darwin.

The new scientific book is different from the old. The old style book of science gave dead results where the new one gives not only the results, but a minute account of the method employed in reaching those results. An insight into the method employed in discovery trains the reader into a naturalist, an historian, a sociologist. The books of the writers above named have done more to stimulate original research on the

part of their readers than all other influences combined.

It is therefore much more a matter of importance to get the right kind of book than to get a living teacher. The book which teaches results, and at the same time gives in an intelligible manner the steps of discovery and the methods employed, is a book which will stimulate the student to repeat the experiments described and get beyond them into fields of original research himself. Every one remembers the published lectures of Faraday on chemistry, which exercised a wide influence in changing the style of books on natural science, causing them to deal with method more than results, and thus train the reader's power of conducting original research. Robinson Crusoe for nearly two hundred years has aroused the spirit of adventure and prompted young men to resort to the border lands of civilization. A library of home reading should contain books that incite to self-activity and arouse the spirit of inquiry. The books should treat of methods of discovery and evolution. All nature is unified by the discovery of the law of evolution. Each and every being in the world is now explained by the process of development to which it belongs. Every fact now throws light on all the others by illustrating the process of growth in which each has its end and aim.

The Home Reading Books are to be classed as follows:

First Division. Natural history, including popular scientific treatises on plants and animals, and also de-

scriptions of geographical localities. The branch of study in the district school course which corresponds to this is geography. Travels and sojourns in distant lands; special writings which treat of this or that animal or plant, or family of animals or plants; anything that relates to organic nature or to meteorology, or descriptive astronomy may be placed in this class.

Second Division. Whatever relates to physics or natural philosophy, to the statics or dynamics of air or water or light or electricity, or to the properties of matter; whatever relates to chemistry, either organic or inorganic—books on these subjects belong to the class that relates to what is inorganic. Even the so-called organic chemistry relates to the analysis of organic bodies into their inorganic compounds.

Third Division. History, biography, and ethnology. Books relating to the lives of individuals; to the social life of the nation; to the collisions of nations in war, as well as to the aid that one nation gives to another through commerce in times of peace; books on ethnology relating to the modes of life of savage or civilized peoples; on primitive manners and customs—books on these subjects belong to the third class, relating particularly to the human will, not merely the individual will but the social will, the will of the tribe or nation; and to this third class belong also books on ethics and morals, and on forms of government and laws, and what is included under the term civics, or the duties of citizenship.

Fourth Division. The fourth class of books includes more especially literature and works that make known the beautiful in such departments as sculpture, painting, architecture and music. Literature and art show human nature in the form of feelings, emotions, and aspirations, and they show how these feelings lead over to deeds and to clear thoughts. This department of books is perhaps more important than any other in our home reading, inasmuch as it teaches a knowledge of human nature and enables us to understand the motives that lead our fellow-men to action.

Plan for Use as Supplementary Reading.

The first work of the child in the school is to learn to recognize in a printed form the words that are familiar to him by ear. These words constitute what is called the colloquial vocabulary. They are words that he has come to know from having heard them used by the members of his family and by his playmates. He uses these words himself with considerable skill, but what he knows by ear he does not yet know by sight. It will require many weeks, many months even, of constant effort at reading the printed page to bring him to the point where the sight of the written word brings up as much to his mind as the sound of the spoken word. But patience and practice will by and by make the printed word far more suggestive than the spoken word, as every scholar may testify.

In order to bring about this familiarity with the

printed word it has been found necessary to re-enforce the reading in the school by supplementary reading at home. Books of the same grade of difficulty with the reader used in school are to be provided for the pupil. They must be so interesting to him that he will read them at home, using his time before and after school, and even his holidays, for this purpose.

But this matter of familiarizing the child with the printed word is only one half of the object aimed at by the supplementary home reading. He should read that which interests him. He should read that which will increase his power in making deeper studies, and what he reads should tend to correct his habits of observation. Step by step he should be initiated into the scientific method. Too many elementary books fail to teach the scientific method because they point out in an unsystematic way only those features of the object which the untutored senses of the pupil would discover at first glance. It is not useful to tell the child to observe a piece of chalk and see that it is white, more or less friable, and that it makes a mark on a fence or a wall. Scientific observation goes immediately behind the facts which lie obvious to a superficial investigation. Above all, it directs attention to such features of the object as relate it to its environment. It directs attention to the features that have a causal influence in making the object what it is and in extending its effects to other objects. Science discovers the reciprocal action of objects one upon another.

After the child has learned how to observe what is essential in one class of objects he is in a measure fitted to observe for himself all objects that resemble this class. After he has learned how to observe the seeds of the milkweed, he is partially prepared to observe the seeds of the dandelion, the burdock, and the thistle. After he has learned how to study the history of his native country, he has acquired some ability to study the history of England and Scotland or France or Germany. In the same way the daily preparation of his reading lesson at school aids him to read a story of Dickens or Walter Scott.

The teacher of a school will know how to obtain a small sum to invest in supplementary reading. In a graded school of four hundred pupils ten books of each number are sufficient, one set of ten books to be loaned the first week to the best pupils in one of the rooms, the next week to the ten pupils next in ability. On Monday afternoon a discussion should be held over the topics of interest to the pupils who have read the book. The pupils who have not yet read the book will become interested, and await anxiously their turn for the loan of the desired volume. Another set of ten books of a higher grade may be used in the same way in a room containing more advanced pupils. The older pupils who have left school, and also the parents, should avail themselves of the opportunity to read the books brought home from school. Thus is begun that continuous education by means of the public library which is not limited to the school period, but lasts through life. W. T. Harris.

Washington, D. C., *Nov. 16, 1896.*

AUTHOR'S PREFACE.

THANKS to a number of wide-awake observers and engaging writers, ornithology is fast becoming one of the most popular studies in our homes and schools. The birds are actually winning fame, and well they deserve all the laurels they have captured in recent years. Yonder little black-capped chickadee will soon be more of a celebrity than the virtuoso on the human stage, and the hermit thrush will steal the bays from the brow of the most renowned prima donna. Well, let it be so. We shall

not be jealous of the plaudits given to the outdoor choralists, even if we human performers are in a measure forgotten.

Not only are books on birds in demand, but the ornithologist is often solicited to give talks and lectures in parlors, high schools, colleges, and churches, and at popular summer assemblies. Even the stereopticon is being used to illustrate lectures on feathered folk, and young people, as well as their elders, seem to listen with spellbound interest to the portrayal of bird life, and are as ready to break into applause over some avian exploit as if it were a tale of human achievance or heroism. All these are cheering signs of the times, indicating a healthy moral and mental growth.

Yes, the ethical life, as well as the intellectual, is stimulated by the enthusiastic study of Nature. All of us are familiar with Thomas Chalmers's famous discourse on The Expulsive Power of a New Affection. The best way to crowd out the evil is to crowd in the good. Darkness flees before the advent of light. If we harbor pure thoughts there will be no

room left in the mind for impure ones. Let a young person become absorbed in some interesting branch of natural history, and his moral safety will be guaranteed. Yet all this will be effected without any dull preachment, without even the suggestion, to say nothing of the obtrusion, of a moral purpose; simply by the native power that such studies possess for expurgating the mind. Nor is the moral benefit solely negative; positive good is derived from the contemplation of Nature, making the observer more humble, devout, and unselfish.

This little book of tidings from birdland has been written with two purposes in mind. The first is, to furnish actual instruction, to tell some new facts about bird life that have not yet been recited—that is, to give a little bird "news." For the most part, it contains a record of my own observations, and is therefore not a reiteration of what others have said. I have gone to the birds themselves for my facts, and have made very little use of books. The reader is taken into the actual outdoors.

The second purpose of the book is inspiration. It is by no means a key. Perhaps a sufficient number of keys have already been issued. It would at least seem to me that the manuals of Dr. Coues, Mr. Ridgway, and Mr. Chapman leave little to be desired in the way of helps in the identification of species. Instead of telling all that is or may be known about a particular bird, I have sought only to recite such incidents as will spur the reader to go out into the fields and woods and study the birds in their native haunts. Indeed, if he should lay the book aside and dash afield to see the birds themselves, I should not feel in the least slighted, but should regard it as the highest compliment that could be paid to my humble efforts.

Even at the risk of dampening enthusiasm, it should be said that bird study is not all roseate. While in many respects it is like play, it also has in it the element of work. The birds will not often come to the observer; he must usually go to the birds. He will often find them shy and elusive and hard to

approach. He will also suffer at times from heat, thirst, weariness, and mental depression. Mosquitoes and other insects will bite and sting him. Sometimes his efforts will be baffled and his hopes disappointed, and he will even be tempted more than once to doubt his "call" to the study of feathered creatures. But difficulties should not daunt him. He should rather feel a pride and an exhilaration in overcoming them, and should remember that faint heart never won anything that was worth winning. The delights of discovery and of commerce with Nature will more than compensate him for the few discouragements in the way. There is no royal road to natural history, but it is, nevertheless, a most enchanting road.

L. S. K.

April 18, 1898.

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NOTE.

To the editors and publishers of the various periodicals in which the articles comprising this volume were first published, the author would desire to make grateful acknowledgment for the privilege of reprinting them in more permanent form. Most of them first appeared in wide-awake young people's papers, while several were published in journals for older readers, among which may be mentioned The Evening Post, New York, The Living Church, Chicago, and The Ohio Educational Journal, Columbus, Ohio.

Oh, happy life, to soar and sway
  Above the life by mortals led,
Singing the merry months away,
  Master, not slave, of daily bread.
And when the autumn comes, to flee
Wherever sunshine beckons thee.

JAMES RUSSELL LOWELL.

You must have the bird in your heart before you can find it in the bush; and when once you have it in your heart, the finding of it in the bush is a secondary matter.

JOHN BURROUGHS.

NEWS FROM THE BIRDS.

OUTDOOR EXERCISE.

An active, healthy boy said to me the other day that he wanted to go downtown to a gymnasium. Now, I haven't a word to say against gymnasiums for those who must have them; let them swing the dumb-bells as much as they like, turn handspring and somersault, and perform any other exploits that will develop brawn and muscle and manly strength. But the lad to whom I refer lives in the suburbs of the city, and so I pointed to the beckoning fields and woods, stretching away in the rear of the house, and said, with some energy:

"There is your gymnasium, my boy—the great, unlimited out-of-doors! There you can get plenty of exercise, plenty of fresh air, and at the same time gather treasures of knowledge from Nature's exhaustless storehouse. That will be better, far better, than dumb-bells, swings, clubs, and ladders."

And I repeat that advice to all who may deign to read this volume. Indoor calisthenics are for those who are cooped up in cities and can not go consorting with Nature. No exercise is more healthful than walking, and if, in addition, you want to bring all the muscles of your body into play, why not climb a tree, or swing about in the saplings, as the chickadees do, or wrestle with a log as you roll it over the leaf-carpeted floor of the woods, or turn somersault and handspring on the soft sod of the meadow? Let the sky witness your feats of skill and strength, and the birds chirp their applause at some signal victory. Cultivate the outdoor spirit if you want to be healthy and wise, whether you ever become wealthy or not. Soundness of body is to be kept or won not so much by going after it in a self-conscious way as by becoming so absorbed in some pleasant and healthful pursuit that you forget all about your aches and pains, if you ever have any.

In your outdoor recreations it is well enough to have some subject in which you are especially interested—a hobby, if you choose to call it that. There are the rocks, the flowers, the insects, the mammals, the birds. You see, I mention the birds last to give my catalogue a kind of climax. Study whatever you like best,

and do not merely loll and dream; but I extend to you an earnest and cordial invitation to cultivate the friendship of our happy feathered commoners, believing that no branch of natural history will afford you quite so much delight.

But let me say first, last, and always, don't carry a gun, don't rob nests, don't in any way molest or injure the birds. Be true bird lovers, not scientific brigands and butchers, and then the birds will return your kindness with usury, by letting you into many a pretty secret of their glad lives. All the tools you need are a good opera glass, a standard manual or key, an alert mind, and a sharp eye.

One of the indications, to my mind, of the growing army of real bird lovers is the fact that I receive scores of letters from young people and their elders all over the country, from Maine to California, asking for the titles and prices of the best manuals on bird study. These letters are always answered with pleasure, my only regret being that more inquirers do not make use of Uncle Sam's postal cleverness. Perhaps the readers of this volume would be thankful for a little information on the subject of helps in bird study, although I can not here give a bibliography of the subject. If you are a beginner, you will want a key—that is,

a book which gives a clear and concise description of the markings and habits of each species in your neighborhood. It might be a good plan to try to secure an official work on the birds of your State, if such a treatise has been published. I would suggest that you send inquiries, inclosing a stamp, to Mr. L. S. Foster, publisher of The Auk, 33 Pine Street, New York, who is a most obliging gentleman.

Meanwhile, I heartily recommend two manuals covering the whole field of North American ornithology, with the help of which you may be able to identify any bird, no matter in what part of the land you may live. The first is Dr. Coues's Key to North American Birds, published by Estes & Lauriat, Boston, Mass., price $7.50. The second is Robert Ridgway's Manual of North American Birds, published by J. B. Lippincott Company, Philadelphia, Pa., price $7.50. There are other cheaper works intended as aids in identifying the birds, but they are only fragments, and are therefore not of so much practical service unless you have a complete manual besides.

However, there is one recent work which I would especially commend to all bird students living in the eastern part of North America. Although of narrower range than Coues's or

Ridgway's works, it is, in my opinion, the most serviceable manual for beginners that has yet been issued. I refer to Frank M. Chapman's Handbook of Birds of Eastern North America—library edition, $3; pocket edition, $3.50. Bird Life, by the same author, with seventy-five colored plates, $5. These valuable works contain a description of every avian species found east of the Mississippi River from the Arctic Ocean to the Gulf of Mexico, and is embellished with over two hundred excellent and lifelike pictures of birds. The descriptions are written by a bird enthusiast, so that the work, scientific as it is, is far from being a dry treatise.

Mr. Chapman's handbook has another decided advantage: it is of a convenient size to be carried with you in your jaunts afield. Strap a haversack about your shoulders, stow in it this manual, a good opera glass, and an appetizing luncheon, and then you may hie forth early in the morning, feeling that you are amply equipped for an all-day ramble in the choicest haunts of your feathered favorites. With the book and the glass you will be able to identify the birds on the spot, while the luncheon—well, you will need no special lecture on its desirability.

SEEING WHAT YOU CAN SEE.

And now, young friends, having had some words of council together, let us take a number of jaunts to the country, to see what we can see, to gain healthful exercise, and go to school to Nature, our loving mentor, all at the same time. Not for anything would I have missed the lessons I learned, one day of early spring, in one of my strolls. The farmer was plowing in a level field near the woods, and the robins and purple grackles were following in the moist furrows for worms and larvæ. How the robin's breast blushed in the sunshine, showing almost crimson above the brown, newly turned-up soil! And the grackles—never have I seen their glossy necks gleam so splendidly as when they caught the rays of the sun and flung them like purple spray to my eye. Looking as wise as Solomon and as stately as Cæsar, they walked over the plowed ground, now and then stopping to pick up a billsome morsel, and then turning their white eyes to glance inquiringly

Red-winged blackbird.

at me, as if they wondered what might be my opinion of them.

After watching them a while, I made my way to my favorite marsh, where I learned something new about a very familiar friend. A red-winged blackbird sat upon a small tree and sang his gurgling melody, "O-o-o-gl-e-e! o-o-o-gl-e-e!" and then, much to my surprise, broke into a fine, high-pitched twitter that I had never heard before. At first I looked around for another bird, but soon proved beyond a doubt that Mr. Redwing was the author of the half-musical, half-squeaking ditty. It seemed to be a sort of complaint, as if the bird were saying, "I do wish that man would go away, and not disturb me while I am rehearsing my solo."

Let me describe another ramble taken on a delightful June day to what I may call "a birds' meadow." A ride on the electric car to a park beyond the outskirts of the town, a pleasant walk through the park, followed by a tramp through a large tract of timber, brought me to the charmed inclosure. It was a long, narrow strip of green running up into the woods, very quiet and secluded. Not a house was in sight, and at only one or two places could I catch a glimpse of a carriage

passing along the road beyond the woodland. It was a kind of cloistered spot where my dear little friends, the birds, could sing their songs and rear their broods undisturbed.

Coleridge says, in The Rime of the Ancient Mariner, of the sea through which the ghost-like boat was sailing:

> So lonely 'twas that God himself
> Scarce seeméd there to be.

But I must hasten to tell you that my meadow was not a place like that. It was sequestered, but by no means lonely.

Near the middle of the field purled a little brook. It was fringed on either bank with small willows, briers, and bushes of various kinds, and here many birds found a pleasant dwelling place. I could not help giving fancy the reins for a little while as I stood at the border of the meadow. Here the bobolinks, meadow larks, song sparrows, brown thrashers, and summer warblers could make the air dance with song all the long summer days. What concerts they must have given early in the mornings! Here, too, they could build their nests and rear their young unmolested by human foes. What plans for nest building must have buzzed through their wise little

heads! If you could have witnessed all their doings and listened to all their sayings, you might have spun a story about them more charming than a fairy tale.

But I must hurry along, or there will not be time to tell you about a pair of bobolinks which I watched for a long while. At first they were perched on the willows on the brook's bank. As I approached, they flew out and hovered over my head, calling in alarm that I should not go too near their nest. Do my young readers know the bobolink? He is that bird which lives in clover fields and meadows during the summer, and which wears a handsome suit of black, white, and yellowish. The white extends down his back, and the yellowish stains the back of his neck. He sings a sweet, prolonged strain while circling in the air. His mate is quite different in color, being clad in modest brown.

When alarmed, the male bird cried "Chack! chack!" in tones almost as harsh as those of the blackbird. Strangely enough, his brown little wife uttered a call in a much higher and mellower tone, which told that she was very uneasy about something. In spite of Mr. Bobolink's anxiety, he could not help darting out into the air every now and then and bursting

into song. His throat seemed to be a fountain of music, from which his clear, bell-like tones gurgled and bubbled and rippled, leaving a trail of song spray behind him as he floated through the air.

It was evident, from the behavior of the two birds, that they had a nest somewhere in the grass. So I took my stand at some distance to watch them, hoping they would dart down to the nest and thus give me a chance to discover their secret. But they had their nimble wits about them. Mark how they managed to throw me off the track. Whenever I started toward the place where the female had alighted, her mate would give the alarm by loud chattering and singing, which would bring her up from the grass before I could get near. To mix matters still worse, she would always rise at a point some distance from the spot at which she had descended. This proved that she had been running about in the grass instead of sitting on the nest or feeding her young. Besides, she descended at so many different places that I could form no idea where the nest might be. There could be no doubt that young birds were cuddled some where in the tall grass, for the mother bird often held an insect in her bill intended for her babies.

The male was also shrewd and wary. He was not going to betray their secret, nor allow his mate to do so—no! no! Whenever she started to fly down from the bushes into the grass, evidently to feed her little ones, he would dart after her like a living arrow, and drive her around and around over the meadow, until she would drop into the grass or plunge into the thicket to escape him. All the while he would sing with might and main. No doubt he did this to prevent her from betraying the whereabouts of the nestlings. Don't you think he was a cunning bird? He seemed to say: "There's no bobolink's nest within a mile of here, sir. Why, can't you see? Our courtship days are not over!"

Much as I wanted to find the nest, the birds outwitted me, and so I strolled farther down the stream. Presently a cuckoo flew out of a wild-rose copse. On pushing aside the bushes, I found her nest. It contained but one egg. Indeed, it was so loosely put together that I did not see how it could hold more. How it could sustain the weight of the sitting bird was a problem. I have seen cuckoo nests that were quite well built, but this bird could not have been much of a carpenter. If you could see an unfledged baby cuckoo I am sure you would

laugh. His skin is as black as a crow's feathers, and is covered sparsely with thick, stiff bristles. But he feathers very rapidly, and leaves the nest much sooner than most perching birds.

Near the lower end of the meadow another male bobolink was swinging on the top of a small willow tree. He began chirping uneasily. Surely there must be a nest near at hand. The female was nowhere to be seen. No doubt she was sitting on the nest. The forenoon was slipping away, and I could not wait for her to fly up and show me where her cottage was hidden. So I stalked about in the tall grass, hoping to be fortunate enough to stumble upon the nest. Suddenly the female flew up before me with a cry of alarm which meant that she had been driven from her cradle. Yes, there it was, deftly built in a grass tuft, the bottom resting on the ground. It contained six half-fledged baby birds, which, after the fashion of most nestlings, opened their carmine-lined mouths for food as the spectator bent over them. They looked warm and damp, lying there in the broiling sun, and acted as if they were almost suffocated.

This was only the third bobolink's nest I had ever found. The other two were some-

what different. They were fixed in a small hollow scooped out of the ground by the birds themselves, and were snugly ensconced in the grass, one of them being daintily roofed over with plantain leaves. This one in the meadow, however, rested on the ground and grass roots, and was not sunk into the soil at all, nor was it protected above. Thus it will be seen that birds of the same species build after various designs. No two bird houses are precisely alike, and this gives charm and variety to nest hunting.

The parent birds were greatly alarmed when they saw that their little homestead had been found. What a pother they made! They flew out from the willows and hovered overhead like the red-winged blackbirds, crying pitifully: "Don't steal 'em! please don't! We love 'em so!" Of course, I wouldn't rob a pretty nest, and not one of my young readers will ever be heartless enough to do so.

There were many other birds in this meadow, but the only other nest found was one of the brown thrasher, which was raising its second brood. On my way home in the park I happened to glance up and saw a flicker's head protruding from a hole in the trunk of a young oak tree. She looked at me in a quizzical way,

turning her head from side to side, as if asking what my business was. I tapped the trunk of the tree with my cane, but she would not fly from the hole. Of course, it was her nest, and she was not going to desert it. The tree was not more than two rods from the end of the electric railway. Here, where hundreds of picnickers often came, this bird had chiseled out her nursery and was rearing her brood.

One who has a mania for birds can scarcely take a ramble even to the adjacent field without witnessing some incident worth recording. More than that, the birds that one has studied for years are constantly performing new tricks, so that one can never become weary of the study of them.

Here is an example. In one of my strolls my familiar little friend, the black-capped chickadee, was tilting about in the willows at the border of the swamp. It seemed scarcely worth while to spend any time with him, for I had studied him so much that surely none of his performances could surprise me. Still, I decided to tarry a few minutes and watch him. Good thing I did. The little fellow darted from the willow withes to the fence near at hand, and alighted on the upper side of the second rail from the top. The top rail was a

little over a foot higher. Then what did chickadee do but fling himself straight upward, turning halfway around as he did so, and cling with his claws to the under side of the upper rail! Picking a nit or a worm, he let himself drop, wheeled around like a cat, and alighted on his feet on the rail below. But that was not enough. Perhaps he thought I had not seen him, or might not believe my eyes if I witnessed the feat only once, and so he repeated it, as much as to say: "There! You can be sure now you saw me perform that trick, if you want to write up any more of my exploits for the entertainment of your friends."

Think of a bird being able to wheel around in ascending only a foot, and catch himself with his claws on the flat under surface of a rail! He ought to have a gold medal!

Another chickadee at the same place had found a dainty of some kind, which he was holding with his claws on a perch near the ground and nibbling greedily with his bill. I was anxious to know what his dinner was composed of, and so I slyly drew near. He was not very skittish, but allowed me to come within a few feet of him; but when I stepped smartly forward, he seized the delicacy in his bill and scuttled off with it, so that my prob-

lem went unsolved. How he scolded and chattered! "You highwayman, bandit, brigand! Do you want to rob a little bird of his dinner?" he demanded.

And thus, you see, if you will make the great outdoors your gymnasium and will keep your senses alert, you will discover many a quaint bird antic that escapes duller eyes, winning for yourselves at the same time robustness of body, keenness of observation, and tonic for the mind. Try it. Nature will charge you no admission fee to her exercise grounds, her concerts, her menageries, and her aviaries.

MY WINTER COMPANIONS.

Nothing in outdoor study is more interesting than a comparison of the conduct of the birds in the same season of different years, for it must not be thought that they always behave in the same way. The present winter —this was written in the winter of 1892–'93 —has been much colder than last, and so the feathered folk have changed their manners somewhat, to suit the changed conditions.

Here are a few instances: Last winter the meadow larks remained in my neighborhood until the 30th of December, singing a dirge—although it was rather cheerful to be called that—to the dying year; this winter they were off to the south before the first cold wave came in November. A year ago there were flickers and bluebirds in abundance all winter in my favorite woodland, whereas this year none have been seen since the middle of December. But, most unaccountable of all, last winter, no matter how stormy the weather, I

found flocks of snowbirds and tree sparrows, and felt sure that they were the hardiest birds of my acquaintance; but this winter only a single bird of these species is seen here and there. If it is the cold weather that has driven them away, one feels disappointed in their powers of endurance, for they can not bear as rigorous a season as some of our constant residents—the nuthatches and song sparrows, for example.

But here are some facts of a different nature: The brown creepers and kinglets disappeared last winter when the weather became warm, while, during the present season, when we have snow and nipping, eager winds and sinking thermometers all the while, they are often found in the woods and seem to be as lively and care-free as children at their coasting or skating. The creepers, especially, revel in the cold weather, and perhaps take a jaunt to the north in the winter time, if old Sol grows too familiar. He—the creeper—does not wear that thick waistcoat of feathers for nothing, and he believes in winter, in the reality as well as the name. Never has he been more cheerful than this winter, when the mercury stood at six to ten degrees below zero.

But those pygmies in plumes, the golden-crowned kinglets — no larger than a man's thumb—how do they manage to keep Jack Frost at bay? It may well be asked, indeed, how birds in general keep warm in winter, living, as they do, on cold branches or the frozen ground. During the day constantly in motion, flitting here and there and everywhere, in search of seeds and insects, their constant exercise generates warmth in their bodies. When night comes some of them, no doubt, creep into hollow limbs and tree trunks, and, if they cuddle close together, like children in bed, there is little danger of their freezing.

But the song sparrows, which have been living along the small stream in the marsh, are not the kind of birds that plunge into holes in the trees. They find little, well-covered apartments beneath the overhanging sod of the banks, where the dead weeds, vines, and grasses are sufficiently thick to hold up the snow that forms a roof over them. Some of these little rooms are quite cozy, and well protected from the keen, biting winds. The sparrows often dart up from these hiding places as I walk about in the marsh.

A friend living in northern Indiana—evidently a close observer of birds—writes an in-

teresting account of the behavior of certain woodpeckers of his neighborhood in the winter time. His description is graphic:

"This woodpecker's home," he writes, "will be found in the hollow limb of a large tree, far above the reach of the mink or the weasel, and, should Mr. Raccoon apply for admission at the door, he will find it too small to enter. So, you see, the bird is safe from harm, and need have no fear of the four-footed animals. But the owl and hawk are his greatest enemies, and it is amusing to see him in the morning peeping out of his window to ascertain if the coast is clear before he flits over to a neighboring log or partially decayed tree, where, beneath the bark, lie numerous large, fat, white worms, good enough for the daintiest feathered epicure. He is a warm-blooded fellow, and seems to relish being out of doors when the weather is coldest." It is almost romantic, not to say thrilling, to think of this hardy knight of the woods sitting, warm and happy, in his castle in a tall tree, while the wintry storm howls dismally around his abode.

One seldom fails to witness some freak of bird behavior worth recording when one takes a tramp to the woods. There, for example, was the little crested titmouse which I watched on

a winter day. He had pulled from its resting place the larva of a caterpillar wrapped in its thick, tough cocoon, and was holding it with his claws to a limb while he pecked away at it for dear life, trying to break through the tough, leatherlike covering. I went near him to see how he did it, when he attempted to pick up his morsel with his beak and fly farther away with it; but it proved too large for him to handle easily, and so it tumbled down into the deep snow.

Down scampered the bird after it, almost immersing his little body in the snow. But I reached the spot before he could get a good hold on the larva, and so he flew reluctantly away. The chrysalis case was broken at one side, proving that the bird's efforts had not been unavailing. Not wishing to rob him of his dinner, I placed the larva on the fork of a limb, and stepped back some distance, when, after sundry fits and starts, which said, "No, I guess I won't," and then, "Yes, I guess I will," Master Tit flew back to his luncheon and finished it with much gusto. Another titmouse on the same day found a nest of spider's eggs in a clump of dead leaves, and forthwith dispatched them without saying by your leave.

The black-capped chickadees are also con-

stantly on the lookout for live or hibernating delicacies in the winter season, as are also the kinglets. How cunning and laughable it is to watch one of them thrusting his tiny beak and head into a cluster of leaves to see if there are eatables within! If there are, the birds will work with might and main until the insects are stowed away in their craws.

But how do the birds quench their thirst when all the streams and ponds are covered with ice and snow? Oh, that does not puzzle them for a moment! They simply eat snow, as you have probably seen farmyard fowls do. "When snow is melted, it is as wet as water," is evidently their way of expressing it.

Why has not Nature, so thoughtful in many respects, made stockings for the birds? Every other part of their bodies is quite well protected, but their little feet are bare, and must often get frostbitten. You have no doubt seen the English sparrows squatting flat on their breasts pecking offal or seeds from the snow, or perhaps holding up one foot, and then the other, in their feathery pockets to warm them.

Yet it is remarkable how long some birds can continue to wade about in the snow. A flock of horned or shore larks remained in my neighborhood one winter, and in an adjacent

field they were often running about in the snow and picking up the fragments of corn left where a number of hogs were fed. Their dainty paths could often be traced for long distances. The feet of birds are evidently tough and comparatively free from nerves of sensation.

Charming creatures they are, these fellow-citizens with pinions, always developing some new trait of character that proves them anything but shallow and monotonous. There was some clearing being done one winter in a part of the woods, and the birds were fond of lingering near to gather such dainties as the woodmen's axes may have exposed.

One day I stumbled upon a whole company of birds of various species, where several men had cut up a tree. The feathered banqueters examined the chips and pieces of bark strewn on the ground, the piles of cord wood, the brush heaps near by, and the low stump from which the tree had been cut, and they seemed to find many a grub and larva to their taste. No doubt these tidbits were forced out of their winter hiding places in the wood and bark by the axes of the choppers.

A bird that has interested me greatly during the past winter was the red-breasted woodpecker. He is a very handsome fellow, with

his striped suit of black and white and his brilliant red cap—a genuine drum major. This has been the first winter I have seen him here in central Ohio, although he is a regular spring and fall migrant. But the curious thing about his conduct was that he was here in the early part of the winter, and then disappeared for fully a month during the extremely cold weather; but by the last of January he returned, and was as pert and as much at home as if he had not gone away at all. Then he went off on another jaunt—at least he could not be found in the woods, search as I would—and after a week or so of absence returned again. It is a puzzling question whither he had gone. Did he make a trip farther south to a more friendly climate? or did he merely fly to some other woodland where food was more abundant? or could it be that he had only concealed himself in my own woods, so that I could not find him? You see how many problems bird study presents that it is impossible to solve.

Among the many young people who have written to me about birds is a bright girl in southern Michigan. When I expressed surprise that the red-breasted woodpecker, or "zebra bird," as he is frequently called, was wintering in my neighborhood, she at once

wrote me that this species has remained in her latitude every winter since she has begun to observe the birds.

"Scarcely a day passes, when I am out of doors, but I see one of these birds on our walnut trees," she writes. "This morning the thermometer was eight degrees below zero, with a strong wind blowing and snow falling fast. I put on my rubber boots and waded out to see how the birds were faring, and found the red-breasted woodpecker, as usual, scurrying up and down the walnut trees, apparently finding many a tasteful morsel. He is so tame that he doesn't mind being looked at when near the house. Having satisfied his appetite for insects, he flew over to a crack in the bin and regaled himself on corn."

These facts are of deep interest to the lover of feathered folk, but no less interesting is the fact that this girl would wade out through the deep snow on a bitter winter morning to study them. What a legion of young bird students we shall have in the near future! Their number is increasing every day.

I am minded to add a little more about birds from the pen of my interesting correspondent:

"The constant companions of Mr. Zebra

Bird," she writes, "are the nuthatches, which are very tame, and stay about the premises all the while, both summer and winter. The like may be said of the chickadees." Her little sisters have their playhouse in the garret, which overlooks the woodshed, and, as they keep crumbs scattered over the roof of this shed, the birds are well fed, and become so tame that they even go inside the garret while the children are eating their luncheon. She keeps cracked walnuts for her pets in the shed, and one day, when she climbed into a walnut tree, she found many of the crannies of the bark crammed with kernels. She also found a grain of corn in a crevice. Uncertain whether it was the work of squirrels or birds, she kept watch, and saw a nuthatch seize a kernel and hammer it into a gully of the bark, crying, "Quank! quank!" in a very knowing way. This vigilant, quick-witted girl will be a genuine naturalist by and by.

Where I live, no less interesting bird ways have been observed. In the former part of this chapter I spoke with some surprise of the absence of the snowbirds and the tree sparrows. A week or so after that was written I found rather large, scattering flocks of both species, although since then they have not

been seen so regularly as in other winters. Sometimes the snowbirds were missing, then the sparrows, and at other times both.

One time the weather became so cold that the mercury sank to nineteen degrees below zero, in some places twenty-two; but when I tramped out to the woods—I had to wrap up warm to keep from freezing—I found the hardy little tree sparrows flitting about on the snow as cheerily as you please, rifling the weeds of their seedy treasures. They really did not seem in the least to mind the bitter-cold winds, and I did not see them draw their little bare feet up into their feathers to keep them from becoming chilblained.

MORE WINTER EXPLOITS.

No bird acquaintance of mine has proved more interesting than the little brown creeper.

One February day I saw a creeper behave himself in an unheard-of way. He was flitting about the base of a large oak tree, covered in places with green moss and gray lichens. Sometimes he would march up a few feet, and then shuffle straight down, sidewise, though never headforemost. Presently he wheeled clear around twice, without moving out of his tracks. Was he converting himself into a whirligig? I felt almost like saying "Next!" to the little performer. Some of these days I expect to see him stand on his head or turn a somersault.

My neighbor, the farmer across the fields, has enabled me to identify a new bird this winter. He shot a hawk and handed it to me, saying:

"Here is a hawk I've never seen before. I think it must be a new kind. I wish you'd find out what it is and let me know."

The red-shouldered hawk.

I bore it home to my study, and consulting my bird manual, found the bird to be the red-shouldered hawk—a very fine specimen. His shoulders, or wing coverts, were a rusty red or brown; his lower parts beautifully striped and mottled with rufous and

white, while his long tail was handsomely barred with black and white. What a pity that so regal a bird should be a conscienceless freebooter preying on our beautiful and innocent song birds!

I was much interested in a colony of song sparrows dwelling in a marsh during the same winter. One day when the snow lay deep everywhere a sparrow hawk was prowling about the marsh, and when I waded along the stream I could find but two of my song sparrows. A day or two later not a sparrow was to be found, but two murderous hawks were gliding around in their oily way. No doubt the bloodthirsty birds had killed some of the innocent sparrows, for the bushes and weeds were so thickly covered with snow that they could find very few places in which to hide from their merciless enemies.

While the snow lasted no sparrows were to be found in the marsh, but you may imagine my joy and surprise to find that they returned —at least some of them—when the snow melted. They had perhaps sought better hiding places when the hawks came, and remained concealed until it was safe to return to their favorite feeding ground in the swamp.

How the snowbirds and tree sparrows de-

light to hop about on the snow, eating seeds and making dainty trails! This I saw them do one day when the weather was fierce, my farmer neighbor declaring that the mercury had stood at twenty-two degrees below zero in the morning. The birds seemed to be very comfortable without stockings or shoes. Nature has given them all the foot gear they need. More would only be in the way.

As the spring advances and the weather becomes milder, the birds regain their lost voices, and if my readers will then go out of doors they will find all the woods and fields, uplands and lowlands, flooded with melody. I give you a season ticket free to all the outdoor concerts you have time to attend. Do not let the opportunity go by unimproved.

How much we miss by not being always on the alert! "Always" is a good time to have your eyes open. This is true in the study of Nature as well as in the study of anything else. I read in a book a good many years ago that it was not worth while to study the birds in midsummer, as they were then molting and did scarcely anything but skulk about among the bushes, ashamed to be seen.

That advice did me a great deal of harm for several years, but at last I resolved to test it for

myself, and was surprised to learn that midsummer is almost as good a time as any for the study of feathered folk. The nests of doves, cardinal grossbeaks, goldfinches, and indigo birds rewarded my search even in the latter part of August.

There are persons who think Nature is not worth studying in the winter time, but I know a writer who finds the most wonderful things to describe in that season. A frozen pond furnishes him a subject for a long and delightful essay. He sees jewels, pearls, and diamonds on its frost-bound surface and along its broidered edges, and I often wonder why I am not dowered with such a wonderful double vision as he.

But in my own line I do see a great deal in the blessed winter weather. Take one day as an example. A zebra bird had been seen in my woodland a few days before, and I was anxious to know if he still was present. But on reaching the spot in the woods where he and a colony of other birds had been wont to linger, not a feathered flitter was to be found nor a voice heard. So I pressed on through the woods, almost to the other side, before I saw a single flash of wings. Suddenly, as the sun peeped out from behind a cloud, the soft,

sweet whistle of the black-capped tomtit fell on my ear. It seemed like a silvery arrow flying through the nipping, frosty air.

A little farther on there were crested tits, nuthatches, kinglets, and woodpeckers in abundance, and one robin, with a blushing breast that made him look as if he had taken a bath in red paint. A crested tit flew to a little snag sticking in the ground, and drew out something that he relished from the splintered end. On examining the branch, I could see the little pocket in which the delicacy had been stored. The bird had probably put it there in the autumn for winter use, thrifty little husbandman that he was.

But the most cunning bird trick I saw that day was performed by the brown tree creeper. It was only the second time that I had seen the antic. You must remember that this odd bird never perches, but always creeps up or clings to the side of a tree or branch. How do you suppose he manages to preen his feathers after he has taken a bath? On that day he clung to the trunk of an oak and put his robes in order with his bill. He would often perk up his tail in a most cunning way as he reached back to arrange some of the quills. At length he flew to a slanting limb, where he could hold

himself more easily, and continued making his toilet.

However, hunt as I would, I could not find my red-breasted woodpecker, or zebra bird. So I started homeward—for my time was limited—feeling somewhat disappointed. Passing by the place where I had expected, less than half an hour before, to find him, but had not been able to see a single bird, I suddenly heard a sharp chirp. Turning back, I soon espied a company of birds of various species, among them my zebra bird, calling, "Chack! chack!" in his harsh but cordial tones. Where had those birds been when I had passed that spot before? That is a question I can not answer with certainty. Perhaps they were picnicking in some other part of the woods, and had returned during my absence. At all events, my ramble proved that it is best to have one's eyes open all the time, for the unexpected is sure to happen.

One of the prettiest bird performances I have ever seen took place in the woods in January. The juncos, or snowbirds, were the actors in the little scene. Snow lay on the ground. The birds were hungry, and took their luncheon in the following unique way. They would fly upon a slender weed stalk,

bend it down with their weight, and hold it on the ground with their feet, while they rifled the pods of their seeds; then they would hop off the stem and allow it to swing up to an upright position, after which they would pick up any seeds that might have been shaken out on the ground. They did this again and again, so that it may be set down as one of the pretty "ways" of Master Junco.

NESTS AND NESTLINGS.

We call a boy or girl who learns very fast, precocious. There are birds to which this term might be applied as well. Not all birds are equally apt at learning, nor do all grow with equal rapidity. Of three half-fledged wood thrushes which I brought home from the woods one day for pets, one of them was a good deal larger than the rest, and hopped out of the nest over a day before they did. He also was the most intelligent, sang long before his mates did, set them the example in everything, and even showed them very soon that he was the autocrat of the cage.

But the most curious instance of a young bird's superiority to his fellow nestlings was observed in a brown thrasher's nest which I found one summer. One of the youngsters was almost twice as large as the other occupants of the bird homestead, his pinfeathers and quills showing very plainly when I first discovered the nest, while his little brothers were covered only with soft fuzz and down. When I next

visited the place, he took up the greater part of the nest, his smaller companions cuddling under his wings. I marked him for a pet. So one evening I walked out to the meadow, and put my hand on the precocious youngster; he made such a vigorous leap that he almost wrenched himself from my grasp; but I held him fast and bore him home in triumph. The other birdlings were so inferior to this sturdy fellow that, with all the racket he made, they only squatted close to the bottom of the nest, and did not try to escape.

Brownie—for that was the name I gave my precious pet—grew very fast and became a bright, sensible bird, and an excellent singer.

Nothing is more absorbing than the hunting and study of nests. Where would you look for the nests of the little goldfinches? You will find them mostly on small trees—maple trees seem to be preferred—such as line the streets of towns. They make a compact little basket, built of fine grass fibers, thistle down, and wool. It is placed neatly in the crotch of a bough, where it is well supported all around. But you would not be likely to look in a blackberry thicket for a goldfinch's nest, would you? Yet one summer, much to my surprise, I found one in such a place.

The wood thrushes build their thatched cottages in the saplings that grow in the woods, often by the side of a winding path or wagon road, while the brown thrasher selects a thicket of bushes, a brush heap, or even the ground, for a building site. Catbirds like a bush; towhee buntings choose mother earth, that being a substantial foundation, although they sometimes prefer a thick bush like the catbird; vesper sparrows, black-throated buntings, meadow larks, and bobolinks conceal their nests in the grass or clover of fields; orchard and Baltimore orioles hang their hammocks on a swaying branch, sometimes quite high in a tree, and sometimes within arm's reach from the ground; for the nests of bluebirds, nuthatches, and chickadees you must look into the natural cavities or deserted woodpecker holes of trees and stumps; bank swallows and kingfishers burrow in the high banks along the streams; and woodpeckers, which are the carpenters among birds, chisel out holes in dead tree trunks or branches.

But it would take too long to go through the whole list. The best way to know these things thoroughly is to study them for yourselves, so that you will seldom look in the wrong place for a certain species of bird's nest. Because the meadow lark often sits on the top of

a tall tree and sings his piercing melody, is no indication that he builds his nest on trees, any more than it is an indication that the flicker builds on the ground because he often goes prancing about in the grassy fields.

Have you read Mrs. Margaret E. Sangster's beautiful poem, The Building of the Nest? Flow your blood never so sluggishly, it will quicken its pace if you read this stanza:

> They'll come again to the apple tree—
> Robin and all the rest—
> When the orchard branches are fair to see
> In the snow of the blossoms dressed,
> And the prettiest thing in the world will be
> The building of the nest.

It takes human children several years to learn to help themselves to their food, but bird children learn it in a few weeks. Does that prove that birds are smarter than people? Perhaps it would not be safe to say that, but still it is true that, while birds have not so much to learn in life as people have, they learn their lessons much more quickly.

Queer—isn't it?—what devices Nature makes use of for carrying on her work in all the various parts of her domain. No sooner has the little bird got well out of the shell than it begins to open its mouth as wide as it

can for food! How does it know that it is to get its victuals in that way? Its instinct is its earliest teacher, and a wonderful teacher it is. Of course the parent birds know beforehand that their baby will want its dinner very soon after it breaks from its shell, and so they provide a small delicacy of the kind best adapted to the young bird's taste and stomach, and thrust it into its open mouth well down its throat. Then it is just as natural for the baby to swallow as it is to open its mouth, and so down its throat goes the tidbit.

The infant birds will lie in the nest quietly until they hear the rustle of the old bird's wings as she flies to the rim of the nest, when they will forthwith leap to their feet, crane out their necks, and pry open their mouths from ear to ear. Sometimes, if the mother has a large worm or several worms in her mouth, she will parcel them out to her crying brood, until she has gone clear around the hungry circle. Then she looks at them lovingly for a moment, to see if they are all safe and well, and presently darts away for another supply.

But there are some birds which have a very quaint way of feeding their downy bairns. There, for instance, are the hummingbirds. Mr. Bradford Torrey, one of the most pleasing

writers on American birds, has described the process in his book entitled, The Foot-Path Way. He has watched it more than once. He says that the little bird opens its mouth, and then the mother thrusts her long, slender bill down its throat as far as she can, like a ramrod into a gun barrel, after which she goes through a series of forward plunges that are really terrible to witness. In this way she pumps the honey she has gathered, out of her own stomach, and forces it into the stomach of her baby. This process is known by a long, hard name—too hard a one for some of our young readers to manage—regurgitation.

Bird babies are as greedy as any human babies you ever saw. All the use they seem to have for their parents is to supply them with food—to be their caterers, as it were. "Brownie," the young thrasher I took from the nest to raise by hand, was so greedy that he would leap up and gulp down not only the food I offered him, but also the end of the finger on which I held it. And you wouldn't believe how much he needed to satisfy his ravenous appetite. He reminded me of a growing boy of fourteen, who eats all the bread on the plate, all the potatoes, cabbage, and pie near at hand, and then clamors for

more. No wonder parent birds often have a weary, jaded look, waiting on a half-dozen youngsters with wolfish appetites from morning till night. I have watched a faithful mother at her arduous toil, and have seen her bring, on an average, one insect every minute for considerably over half an hour.

After the little birds have left the nest they are still unable to find their own food. They do not seem to understand the art of picking, or of catching insects, but sit helplessly on a twig, opening their mouths whenever the parent birds approach. But somehow they gradually learn to help themselves, perhaps as much by the example of adult birds as in any other way. I think, though I can not be positive, that the parents give their children lessons in the art of procuring a livelihood. I once saw a pair of phœbes teaching a well-fledged brood how to catch insects on the wing; at least, it looked very much as if they were giving them their lessons.

Yet young birds will learn in time to peck and gather food without a single feathered tutor to teach them. Their own instinct seems to suggest how to use their beaks, so that they do not make the mistake of picking up a dainty with their feet, or of lapping water

with their tongues. The birds which I have reared—bluebirds, wood thrushes and a brown thrasher—had to be fed by hand for two or three weeks or more, but by and by they began of their own accord to peck awkwardly at their food, keeping it up until they became expert and could rely solely upon their own efforts.

Everything had to be learned by degrees. At first they were unable to move their food back into their throats from the ends of their beaks, and would often flick it away in their efforts to swallow it; but after a while they learned the use of their tongues, and were able to swallow as fast as they could pick up their food. The first awkward attempts, however, were very laughable. So was the look of surprise that they bent upon me when I gave them a tidbit that they did not relish, which sometimes happened in my experimenting. If I kept on with the same kind of food, they would refuse to take it, the drollest look of disgust coming into their eyes.

Some people think a nestful of young birds anything but a pretty sight. It is true, nestlings that are still callow or in their pin-feathers are not as handsome as they will be by and by when they have donned their com-

plete outfit; and yet few things are more cunning and dainty than a bird cradle full of little ones. They look so cozy and comfortable as they cuddle down close to the bottom of the nest, and, withal, so innocent. I can seldom refrain from touching or stroking them with my hand, merely as an expression of affection, as you caress a favorite dog or cat.

Sometimes they do not seem to mind being stroked, but will look up at you as confidingly as little children. At other times they will open their mouths for food, and even keep them open after you have touched them. There are other species that will snuggle as close as they can to the bottom of the nest, bending their bodies in an arc to fit the cup. It sometimes happens, too, if they are old enough, that they will give a loud chirp and spring from the nest in a wild panic. Indeed, most birds seem to be taught very early by their parents that man is a dangerous enemy; or is it only their nature to become frightened at a creature so much larger than themselves—one that must look to them like a great bugaboo? Who can say?

Shall I tell you of some of the pretty nests I have found? One evening I was walking

through a clover and timothy field, when a meadow lark suddenly bounded up before me. There, through the deep grass, wound a path several feet long, which led to a nest daintily hidden and canopied, containing five or six lark babies. The path had been worn by the old birds going to and from the nest, for they did not seem to alight directly by the side of it, but a little distance away, and then crept through the grass to the site. Indeed, I have found more than one meadow lark's nest by first noticing the little roadway trodden by the old birds in the grass. In one case this path ran under the grass for fully a foot and a half, looking like a little old-fashioned covered bridge.

To return to the particular nest of which I started out to speak, the youngsters must have very recently chipped their shells; for they possessed nothing in the way of clothing but a little fuzz. When I took one from the nest and held it in my hand it was still too young to hold up its head more than a moment at a time. Just one week later to the day—almost the hour—I again called on the happy family in the grass; and what do you think? The babies had grown so rapidly that every one of them leaped with wild chirping from the nest, and

scuttled away through the grass ; and they were all well feathered.

But the same was true of a brood of bush sparrows, whose crib was hidden in the grass at the border of the woods. Poor babies! They were without a feather, with scarcely a gossamer thread of down, stretching up their slender necks, which were so weak that they could barely lift the head, and opening their mouths for food. Even their eyes were not yet open. I visited them a couple of days later and found them beginning to feather, and too knowing to open their mouths when they saw me, seemingly aware that their parents were different-looking creatures.

A week later they leaped from the nest and fluttered off into the grass, though the youngest one could scarcely get over the rim. But hold! What was this? Here was a baby whose head was partly bare, and who was about two-and-a-half times as large as the rest of the children of the family! What could this mean? Why, it was a young cow bunting which the little mother sparrow had hatched with her own bantlings. You are aware, perhaps, that the mother bunting—though she is only half a mother—slyly drops her eggs into the nests of other birds, and leaves them there to be

hatched, and even after they go from the nest she does not take care of her own toddlers, but gives them entirely over into the hands of the foster parents.

Before the little sparrows leaped from the nest it was comical to see how they were arranged. The frowsy bunting was occupying the center of the cup, while his tiny companions were ranged around him, partly covering him, and thus keeping him snug and warm. He was not as far advanced as his tiny fellow-infants, and made no attempt to get out of the nest, but cuddled down close against the bottom. When I lifted him out, he drew with him by his clinging claws a part of the lining of the nest. As the sparrows had a large enough family to take care of without this strapping youngster, I carried him home and adopted him into my own family of pet birds.

In a meadow green and sweet there was a red-winged blackbird's nest, placed in a tuft of grass. There were but two eggs in it at first. As time passed the grass grew taller, thus hiding the nest more completely and making it more cozy. The little birds broke shell at about the time of the exit of the young meadow larks, perhaps a few days later. But

mark! The redwings remained in the nest considerably over a week longer than the meadow larks. This was another surprise, for surely the grown blackbirds are fully as spry and intelligent as their fellow-denizens of the meadow.

TRIALS OF A BIRD'S LIFE.

Yes, indeed, birds have their full share of "trials and tribulations." Those who are not acquainted with their habits would scarcely believe from how many sources their troubles arise. The truth is, they are never safe, for foes are constantly lurking about to harm them or their offspring, so that one often wonders how they can ever be as gay and happy as they are.

Yet they have been wisely endued with keen eyes, swift wings, and sharp ears, so that it is very difficult to surprise them. They seem to espy you afar off as you approach their haunts. Go to the woods at any time, summer or winter, and as you draw near you will hear the alarm call of a half dozen birds, some from the remote sylvan depth, spreading the news of your approach through the whole bird community. It is doubtful if there is a feathered citizen of the place which does not soon know that there is something unusual astir. The chickadee chatters it to the jay, the jay to the flycatcher, the flycatcher to the

thrush, and so the rumor spreads until all the feathered tenants are apprised of your unwelcome presence.

Much as birds sometimes quarrel among themselves, they all seem to be allied against their common foes, and give one another the alarm at the approach of what they look upon as a common danger. I have been trying to account for the fact that the cow bunting, which spirits its eggs into other birds' nests, is tolerated in birdland. You seldom see another bird chasing it about. Perhaps the following is the reason: No bird is more alert for intruders than the bunting as it sits among the branches, having no brood-rearing of its own to attend to, and no bird gives the alarm quicker as one nears its precincts. It seems to realize that its own eggs or little ones in some other bird's nest are in danger, and so it sounds the tocsin to put the foster parents on their guard. The bird seems to be as uneasy about its children as if it assumed the care of them itself. Thus the bunting may not be an unmixed evil in the bird world, after all; he may perform the useful rôle of sentinel.

But, in spite of all the natural cunning of the birds, many real dangers beset their lives, and many sad tragedies occur. A time of

general anxiety comes when little ones arrive in the nest. During the time of mating and nest building there is much music in the bird world, the males vying with one another in their efforts to sing the finest love songs; but when the more serious business of rearing a family is at hand, there is comparatively little minstrelsy, first, because the males must help to feed the children, and, second, because they do not want to betray the secret of the nests.

How the robins sang in my neighborhood in March, April, and May, waking me many a morning at break of day with their chiming choruses! In June, with family cares demanding attention, they seldom uttered more than a wisp of melody. They went about silently, lest their enemies should suspect the presence of their nurseries somewhere in the maples. You must not think, therefore, that there are few birds about in June because you hear so little singing.

Some species make very little ado if you find their nest with eggs in it; but after there are little ones, though ever so young and homely, the old birds will begin to set up a din as soon as you go near; and the older the young birds are, the more excited their parents become. The ovenbirds have an odd habit. As

long as the children are in the nest they seem to be as indifferent as if there were no infants within ten miles; but when the youngsters have left the nest and are beginning to flit about in the saplings, their parents begin their loud chirping as soon as you get within sight of them.

Among many birds this habit prevails. You can almost always tell when Madam Robin's bairns have taken wing and ventured from the nest, for she proclaims the fact to the entire community by her loud and nervous chirping. Why she does not keep the secret to herself is a problem. But the crow black-birds, brown thrashers, and catbirds behave in the same inconsistent way.

The conduct of a pair of parent birds when their children have been killed or kid-napped is often very pitiful. They grieve for days after the disaster, fluttering about and calling in tones of distress, and sometimes even gathering food for the missing brood, as if they still hoped to find them.

But birds of different species, and even those of the same species, act very differently when their nestlings are approached. One spring I visited the nest of a pair of catbirds quite frequently. Usually the catbirds are

very uneasy about their little ones, and will *mew* loudly when they suspect the presence of danger; but, to my surprise, the pair of which I speak never once uttered a cry, although I took two of their babies from the nest to examine them. Several flickers have acted in the same way, repressing any outcry of alarm.

What a pity that there can not be perfect harmony in the animal world, and that some species must be constantly preying upon others! But so it is, and we can only wonder at the mystery of it, and do what we are able to lighten the troubles of the innocent.

I find so many despoiled nests in my rambles that my enjoyment of bird study is sadly marred. One spring I think that over half of the nests I discovered were afterward robbed. Many, many times, after finding a nest of some interesting species, and resolving to watch the conduct of the old birds, and be present at the flight of the young ones, the very next time I called at the little cottage it would be robbed of its treasures and torn by ruthless claws.

Probably the worst enemy of small birds is the blue jay, which illustrates the proverb, "Handsome is as handsome does"; for his gay holiday attire does not give him a kind and honest heart. Having found a nest of eggs,

he thrusts his long, lancelike beak into one of them and carries it off to some place where he can suck out its contents. If the nest contains callow little ones, he will gobble them down, cannibal that he is, or carry them one by one to his own brood, to cultivate in them a taste for bird flesh.

Of course, other birds are aware of his preying habits, and give him battle whenever he approaches their nest. He gets many a cuff over his head and back from the vireos, pewees, and sparrows, which are more dexterous on the wing than he. I once saw a wood pewee make the feathers fly from the back of a jay which was prowling about its premises, and I felt like applauding the plucky little David for routing the great Goliath. Mr. Burroughs thinks that other birds, which suffer at the hands of the jay, sometimes take revenge by puncturing his eggs, and otherwise bringing his expectations to grief.

It pains me to have to admit that the catbird, fair-voiced minstrel that he is, sometimes becomes a burglar; but John Burroughs actually saw one in the act of devouring the eggs of the least flycatcher. I have never seen the catbird doing anything of the kind, but if Mr. Burroughs really saw this cruel deed with his

own eyes, no one can deny it. However, I am disposed to think that this bird is seldom guilty of such vandalism.

Among the worst enemies of the birds are the snakes, which improve every opportunity to devour nestlings, some species, especially in southern countries, climbing trees for that purpose. Have you ever seen a pair of song sparrows fighting a black snake? They will dart at him with quivering wings, giving him a sharp stroke with their bills and claws, while he will spring at them with open mouth and try to catch them. They usually are too quick for him, dodging away just in time to escape his fangs. Sometimes, while he bounds after one bird, the other dashes at him from the rear. But doubtless if he finds the nest, he will rob it in spite of their efforts to drive him away.

Of course, the owls molest the smaller birds a great deal, for they steal upon them unawares by night and clutch them with their talons. It is thought that some of the owls reach into woodpecker holes with their claws and fish out the young if the nest is not too deep. An owl was once found dead in such a cavity, where it had clutched a woodpecker with its claws and then had got fast,

A fight for home.

its victim being also dead. Many birds, as I have often proved by prowling about at night, roost in thick thorn bushes and brush heaps, where they are safe from owlish attacks.

But to my mind the most ruthless nest robber is the human one, commonly called a "collector"—that is, a man who makes a business of collecting birds' eggs for lucre's sake. If he would collect only for museums, and then only a few eggs of each species, it would not be so sad; but he often gathers large numbers of eggs—as many as he can find, in fact—and tries to dispose of them to private individuals and mere curiosity hunters. I do not see how any person can look upon these "clutches," as they are called, as pretty ornaments, especially when one remembers the heartaches of the little birds whose nests have been plundered.

The human collector knows better, because he is endowed with reason and conscience, and so I blame him more than I do the birds and animals that ravish nests for food, for that is part of their nature. Far be it from me to say a harsh word about any one, but for my part, if I should rob an innocent bird's nest merely for sport or gain, I should feel that I was little better than a burglar.

OUR SWEETEST SONGSTERS.

A BIRD'S attire has little to do with his song—unless it might be said that, as a rule, the more plainly dressed birds are the sweetest songsters. Look at that modest little minstrel, the song sparrow, not observed by one person out of a hundred, and scarcely known from the English sparrow even by the majority of our country people, and yet what matchless sweetness bubbles from his tuneful throat! The brown thrasher and mocking bird are disappointing at first blush on account of the commonplaceness of their appearance, and must be heard, rather than seen, to be appreciated.

The like may be said of the little European bird of the poets, the skylark. Many a poet, like Keats and Shelley and Wordsworth, has woven a garland of verse about this wonderful bird. Do you desire to learn something about this songster's habits? High in the air as these birds soar when they sing, their nests are built on the ground in a tuft of

flowers or grass. The old birds approach the nest very stealthily, but when the mother has once seated herself upon it she may often be caught with the hand, so loath is she to leave. The eggs, usually four or five in number, are of a grayish color, speckled with brown.

Curious as it may seem, the lark does not perch on a limb, but, when not on the wing, walks on the bare ground or through the long grass. Each pair of birds, if not unfortunate, will raise several broods in a single season. As is the case with the pheasants, grouse, and partridges, the young leave their birthplace very soon after they are hatched, but their manners just at that period of their lives are not well known.

Are you aware that the skylark makes a very fine cage bird? Except the canaries, there is perhaps no bird so greatly esteemed in Europe as a pet, many a poor family that can afford no other luxury having one of these merry minstrels in a cage. It is very hardy, and is, therefore, easily kept in confinement, living on insects, seeds, and vegetables, and seldom being troubled with sickness of any kind. A five-dollar bill will buy one of these delightful pets, if sent to the well-known bird

dealer, George H. Holden, 240 Sixth Avenue, New York.

This lark is happy in all kinds of weather, and sings in his cage all the year round except during the molting season. He will pace from one end of the cage to the other, his head erect, his wings fluttering, and pour forth his song as if a perfect ecstasy had seized him. But his cage must have a cover of some kind over the top, for he naturally wants to rise when he sings, as he does from his native heath, and if the top is unshaded he is apt to dash against the wires and injure himself. He may be taken from the nest when young and reared by hand, and it is said that birds so brought up make the best pets, becoming very tame.

This wonderful bird, if put in a room where there are other birds, will really learn their songs. That of the nightingale, for instance, he mimics to perfection. He and his mate will also rear a brood in a cage if given a quantity of grass and hair with which to construct a nest. At such times they require special care.

But I suppose if you want to hear the song of this "scorner of the ground" at its best, you should be out in the fields on some bright

May morning in England, when you would see him rise from the grass, beginning to sing a blithe song, which becomes more beautiful as he ascends, until finally he seems only a speck in the sky, from which a deluge of melody descends to the earth. Then he sweeps downward, closing his song only when he has reached the ground. It is a wonderful performance. No wonder it is said that he "haunts the sky!" No wonder the poets have gone into rhapsodies over his welkin song! It would be difficult to give a description of the minstrelsy. It is made up of a variety of sweet notes which are uttered in quick succession, the bird keeping time by the vibrations of its wings.

It has often been said that America has no bird whose song will compare with that of the English skylark as it rises far up into the ether. Of course no one wants to say a disparaging word about the British bird, and as to the quality of his song in comparison with the music of some of our own birds I am unable to say anything. But, be that as it may, there are birds in America which mount far up almost, if not quite, beyond the reach of the eye, and sing with a haunting sweetness. Shall I tell you about one of these birds? Its proper name is Sprague's pipit, although it is

European skylark.

sometimes called the Missouri skylark or titlark; but it seems that the name titlark, once applied to several species of birds, is now abandoned, and "pipit" is being used. The bird of which I speak dwells on the prairies and plains of our Middle States, breeding from Central Dakota and Minnesota northward. There are those who contend that its song is not inferior to that of the far-famed European skylark.

A writer in Minnesota gives a thrilling account of an occasion on which he heard the aërial song and witnessed the upward flight of this bird. He was riding along a country road with a friend, when he saw a bird spring from the grass within a few feet of his horse. It flew a hundred feet away with a succession of flits of the wings which lifted it perhaps twenty feet into the air, then it turned and flew back toward him in the same way, again mounting up about the same distance as before. At that point it began to sing with great power, and thus it climbed upward, upward, swinging back and forth, until it finally vanished wholly from sight in the blue ether; then the observer used his field glass, a powerful one, and watched the upward vaulting of the blithe minstrel, which kept up its singing all the while.

Suddenly the song ceased, the bird closed its wings, and plunged head downward like an arrow, only opening its wings when within a yard of the ground, and alighting almost at the point from which it had risen.

The writer says that a description of the song would be difficult, but he gives some idea of it by adding that it consists of a succession of notes, beginning at a high pitch, warbled in a diminishing strain, that is very pleasing and melodious indeed. Certainly this pipit of our prairies behaves much like the celebrated sky-lark of "ye olden countrie."

But—would you believe it?—there is another bird on the prairies of the West which seems to vie with the skylark in aërial song. It is called the prairie horned lark. The writer to whom I have just referred has given a description of this bird's flight and vocal performance. He once saw a male leap about ten feet from the ground and burst into song. The writer says he poured forth such a volume of melody that it seemed he should have burst if he had closed his mouth for a moment. Then the bird turned abruptly to the right, sailing away about fifty yards, when he suddenly wheeled with a rapid flutter of the wings that lifted him thirty feet or more, after which he

swung back a hundred yards at least, and then mounted upward again, thus gyrating back and forth, springing upward and singing without a pause for breath. The song grew fainter, and sweeter, if possible, every moment. After reaching a height beyond the ken of the unaided eye, the vocalist and athlete closed his wings and dived straight downward to the ground with a velocity that made the observer's head swim. Yet the bird touched the grass almost as lightly as a snowflake.

Thus it would seem that we have at least two birds in America which haunt the sky when they sing, and disdain the ground. Some time the poets will rhyme about them as Shelley and Wordsworth rhymed about the skylark.

But we have other birds that sing while on the wing, although they do not vault very high into the air. Many times I have seen that "bonny bit of blue," the indigo bird, dart lightly out on the upbuoying ether, and while poising on the wing, chatter his most rollicksome lay. I have seen the Maryland yellowthroat perform a similar feat, at least a half dozen times. The bobolink does most of his singing while circling in the air, but he does not mount up, up beyond the sight, as does the skylark, and as a hack writer on birds declared some

time ago; he seldom flies higher than an ordinary treetop, generally not so high, when he sings. Yet one spring I heard several bobolinks singing at about three times that height, but they were flying straight across the sky and not mounting upward. It seemed as if they had just come from some other part of the country, and were announcing their arrival with a burst of melody.

When the song sparrow becomes especially joyous he, too, will spring out from a branch or even up from the ground, and trill at the top of his voice. The meadow lark often falls into a lyrical transport and sings on the wing, though at such times he does not pipe his ordinary "Cheer! cheer!" but pours forth a wild medley that makes the welkin ring.

Here is a curious fact about these aërial vocalists: they are all birds that nest on the ground or in low bushes, and that spend a large part of their time there, and they almost always spring from the ground or a low perch into the air. Although there may be exceptions, I do not recall a single treetop lilter that indulges in such vocal gambols.

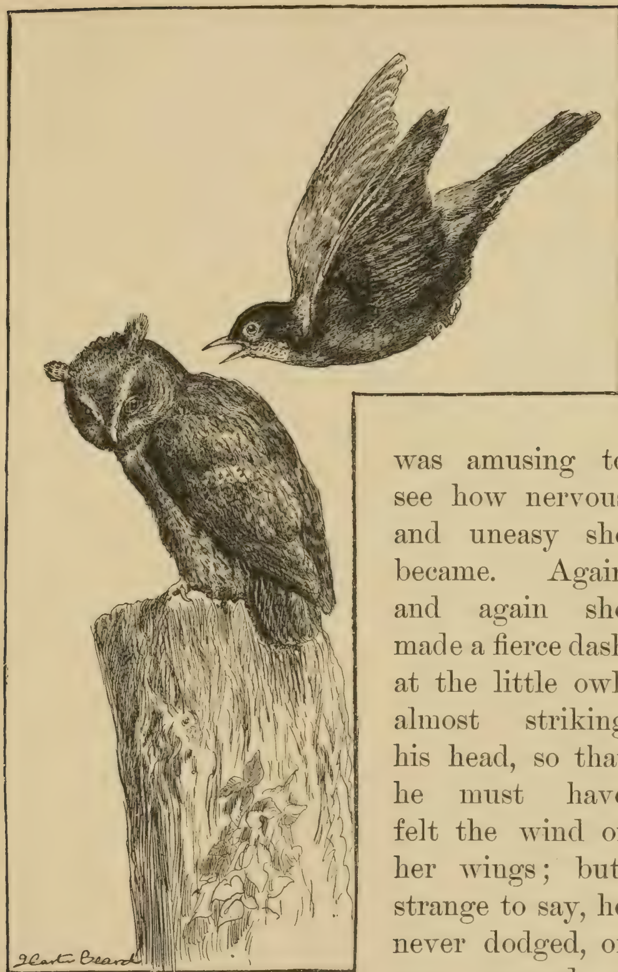
THE FUNNY LITTLE OWL.

The loud chirping of a robin attracted my notice one day soon after I entered my enchanted woodland.

"She has little ones somewhere in the saplings or bushes," I thought, "and takes me for a kidnapper."

But the robin racket being kept up even after I had gone farther away, I went back to see what might be its cause. The distressed mother bird was flitting about in the saplings, and presently swung down toward an old stump. Ah! there it was, the object of her wrath and fear—a little screech owl, standing as straight as a major on the top of the stump. His face was turned toward me, and looking at him with my glass, I could see that his yellow eyes were wide open. His small size as well as his awkward manner proclaimed him a youngster—quite well fledged, it is true, but from the nest only a short time.

Madam Robin seemed to grow bolder. It



Robin and owl.

was amusing to see how nervous and uneasy she became. Again and again she made a fierce dash at the little owl, almost striking his head, so that he must have felt the wind of her wings; but, strange to say, he never dodged, or even moved a feather or a mus-

cle. Every time she swooped down toward him she uttered a loud, angry cry. Why was the little fellow so indifferent to the assaults of the robin, while he kept his face turned toward me, standing four or five rods away?

After enjoying the fun a while (it was fun for me, at least) I slowly drew nearer. Master Owl glared and stared, but did not move until I almost touched him with my cane; then he uttered a scornful hiss, spread his wings, and tried to fly away, but tumbled helplessly, like a loose bunch of gray feathers, to the ground, almost rolling head over claws. When I got close to him again he snapped his bill at me, and muttered something in an angry undertone.

Suddenly there was a wicked snapping of mandibles and a wrathful mumbling above me in one of the trees. It was the mother owl, who would have been only too glad to swoop upon me and tear out my eyes, had not the bright daylight blinded her. As it was, she could do nothing but grind her beak and tread her perch in helpless rage.

Seeing she could not hurt me, I gave my attention to her interesting infant. He opened his little mouth, so humanlike, and muttered, and seemed to be ready to defend himself; yet when I put my cane to his mandibles he did

not seize it angrily, as I supposed he would do. At length I caught him around the back and wings with my hand. He did not offer to bite or scratch, but gave himself up at once, as if admitting that he was in my power, and might as well not struggle. As I gazed into his face and half-closed eyes he looked very human, and I could not help talking to him as if he were a real human being.

I bore him off some distance and placed him on the top of a pile of cord wood, and then went back to see what the old bird was doing. Two robins, an oriole, and an indigo bird were flitting and chirping about her, but none of them had the courage to make a direct attack. They chattered and scolded and blustered, but still they were cowards at heart, and the owl did not mind their hurly-burly.

Many people rail at the blue jay because he robs birds' nests; but he is of some use, after all, as I learned on that day. In the midst of the hubbub a jay came ambling upon the scene, swinging lightly from tree to tree and branch to branch, and moving directly toward the owl. He never paused nor hesitated for a moment. The owl spied him when he came near, and bent clear back on her perch to dodge him, although she had paid no heed at all to the other birds.

Captain Jay, without a quiver of fear or a moment's faltering, dashed against her and knocked her off her perch. She scrambled to another branch, when he swung around and struck her again. The third time he knocked her from her perch she took to wing and flew away, and then there were peace and quiet in the place. I can not help thinking of the brave, masterly conduct of the jay, and his coming upon the scene of contest at the opportune moment reminds one of Sheridan's famous ride and other timely deeds of bravery.

On going back to the wood pile where the baby owl had been placed, I found that he had disappeared; but presently I caught sight of him hulking along on the ground among the bushes not far away. He allowed me to stroke his back without protest, but when I playfully shook him a little roughly, he snapped his beak and growled. I stepped away a rod or more and watched him. He glared in my direction and seemed to hear the least sound I made, swaying to and fro and uttering a complaining *mew*. Again I approached him, when he fluffed up his feathers, making himself almost double his natural size, spread out his wings, swayed his head and body from side to side, and snapped and scolded. Yet, when I

took him up in my hand, he submitted tamely, sitting in my palm as if it were the most natural perch in the world for a juvenile owl.

How well do you suppose a young owl can see in the daytime? This one could see an object near his face, at least in a shadowy way; for, whenever I lifted my hand toward him, he would fix it with his glaring eyes, turning his head from side to side or throwing it back, according to the position of the hand. I lifted him to the crotch of a small bush. There he lay, pillowing his head on one of the twigs, and closing his eyes like an innocent child. Indeed, he seemed so pretty and trustful as he lay there, pretending to go to sleep, that I almost fell in love with him and longed to have him for a pet. He permitted me to stroke his downy head and back, but kept furtive watch out of the narrow chinks between his eyelids, through which I could see the gleam of his golden orbs.

He was learning the lessons of owl habit very early, for his beak was stained with blood. His parents had been feeding him on mice and small birds. Innocent as he appeared, he would have bitten me had I given him half a chance. Once I ventured to put my finger to his mouth as he opened it, when

he seized it and gave me a well-deserved pinch. His neck got quite a sudden twist when I jerked my finger away. I prefer to keep my fingers out of owls' mouths, don't you?

Taking my station about five rods away, I put his sense of sight and hearing to the test. If I quietly moved my hand to and fro, or brandished my cane, he did not turn his head in my direction, proving that he could not see me at that distance; but the slightest noise I made attracted his attention, so that his hearing must have been very acute.

By the way, have you ever noticed an owl's mouth? When opened, it looks precisely as if the bird were smiling broadly and pleasantly—somewhat like a clown in a circus. It does not look in the least savage or cruel. "Enough to make an owl laugh" is a saying that must have come into vogue because that fowl really seems to laugh when he opens his broad mouth. As to my owlet in the woods, the last I saw of him he had toppled from the bush and was flopping along on the ground, stopping now and then to stare about and listen, to make sure that no enemy was on his track.

BIRDS AT A SUMMER RESORT.

THEY were delightfully numerous—the birds met with at a pleasant summer resort in northern Indiana. We—that is, some friends and myself—were living for a few weeks in a tent placed beneath the shade trees; and thus we dwelt right among the birds, which caroled gayly around us and woke us early from our morning slumbers. Although it was the latter part of July, some species were almost as songful as in May and June. This was especially true of the song sparrows, which trilled their roundels in the trees about the tent and in the arbor and bushes that circled the pond a few paces away.

For many years I had been listening to these delightful lowland trillers, and yet that summer they sang some new tunes that were enchanting. One day one of these songsters, perched in a sapling, broke into a run that bubbled up from his throat in a tremulous tone, as if he had taken a little water into his windpipe and were gurgling it. I said to my

friends, "That goes ahead of the famous sopranoist who has been singing so charmingly in the auditorium, doesn't it?" And I am sure it did. If you bend your ear on the trills of the song sparrow, and try to analyze his tones, you will agree with me that no human voice could produce anything so fine.

Our tenting place was near a beautiful lake along whose bush-and-reed-fringed shores I often strolled, and everywhere the song sparrows were in tune. While some of them were familiar, coming near our tent, singing blithely and helping themselves to crumbs thrown upon the ground, others were found in the wildest marshes and thickets along the border of the lake. You see, some of them were disposed to be sociable, while others preferred seclusion. I hope my readers, young and old alike, are on familiar terms with the song sparrow, which is a brown little bird with a speckled bosom and a large dusky spot on the center of his chest. You will find him mostly about low and damp places, although he sometimes ventures to take up residence in higher localities, especially if there are springs and running streams.

Among the most familiar birds that came around our tent were the purple grackles or

crow blackbirds. They were constantly on the alert for pieces of bread and cake flung on the ground by the campers or the picnickers who came now and then to this resort on pleasure bent. Sometimes a company of these sable epicures would alight on the ground and proceed to dispose of a large piece of bread. Then there would be a wrangle in the blackbird household. Usually one of them seemed to be "boss." He would take his stand near the disputed prize, peck chunks from it, and swallow them greedily, dashing at intervals at one of his companions who ventured too close. Sometimes another grackle would come swooping down through the trees and make a determined spring at the arrogant feaster. Then would follow a scrimmage, the two birds dashing together and flying up into the air, clawing and pecking, until one or the other would beat a prudent retreat.

Once a blue jay came near, and I wondered if he would prove himself a match for the ebon revelers, but he was driven away every time he became too bold. The grackles are interesting birds. Have you ever noticed how stately their bearing is as they strut about on the ground, holding their heads erect, as much as to say, "Don't you think us fit to be

kings of the realm?" At a little distance their eyes look white, but if you can get close to them you will find that the iris is golden yellow.

Robins, red-headed woodpeckers, and white-breasted nuthatches were almost as much at home about our tent as the crow blackbirds, and one morning a handsome rose-breasted grossbeak flitted about in the trees near by. He was not shy, but displayed his rosy breast-plate to the best advantage, inviting my admiration.

Do you know the Maryland yellowthroat? He is a dainty warbler who wears a pretty olive coat, a bright-yellow necktie, and a black mask instead of a hat or a cap. You will find him in damp, bushy places. The yellow-throats were very plentiful along the swampy shores of the lake, and, in spite of the lateness of the season, were just as lavish of their music as I have ever known them to be. There is no mistaking their rolling, swinging ditties when once you have heard them, for they are unlike any other warbler's trills. How loudly they ring up from the rushes and reeds, swinging back and forth like lyrical incense!

Few other warblers are more abundant

than these pretty vocalists. In the spring of that year I had spent a month in Louisiana, Mississippi, and other Southern States, and in the dank, quaking marshes, along the streams, and in

Maryland yellowthroats.

the mountain ravines I encountered these pert, half-shy, half-familiar little trillers. Up from the densely matted thickets of the bog-lands their wavering ditties came like silvery threads of sound. In northern Alabama and southern Tennessee they were just as musical, and when I reached my home in Ohio there was no dearth of Maryland yellowthroats. Think of the range of these tiny travelers!

One day I took a long stroll along the border of the lake. In a dense, bushy place a lively trill reached my ear, the musician turning out to be that little nugget of gold, the summer warbler. His entire plumage is yellow, save that his breast and sides are faintly streaked with reddish brown. He is so dainty a birdlet that you are tempted to call him a sylph. While I watched one of these warblers which was flitting about in a small tree, he espied a worm clinging to the under side of a leaf. The problem with him seemed to be, how to secure that insect. There were no twigs beneath on which he could stand. Of course, he might have clung back downward to the leaf, as warblers often do; but then I was standing directly below him, and he could not bring himself to turn his back upon so dangerous a being even for a moment, for in

that moment what might not occur? How he scuttled about from twig to twig, and peered, and chirped, and craned out his neck, and tried to invent a plan to capture his prize! At length he found a twig from which he could, by a supreme effort, reach the coveted worm. Out went his head and beak along the under surface of the leaf. He could just reach the worm. He pecked it with his dainty bill and held it for a moment, but his hold was too meager; the worm squirmed from between his mandibles and toppled to the ground at my feet. It was too bad that birdie had to lose his breakfast, and he gave vent to his impatience by chirping and scolding.

That ramble brought me a very agreeable surprise. In a deep, cool hollow, through which a crystal brook purled, I espied a warbler whose markings were new to me. Its throat was black, its other under parts and its crown yellow, and its general color bluish ash or gray. Well, was I really to have a find? My opera glass revealed another marking—a bright yellow spot on each wing! Ah! I knew the little stranger in an instant. It was the golden-winged warbler, a bird that I had seen but once before, and then he had been so shy that I had caught only

provoking glimpses of him. But to-day my little enchanter permitted me to see him plainly as he flitted about in the low trees. He was a handsome fellow, a genuine Beau Brummel, and I felt very proud of my find.

But here was another bright gem in feathers. Can you pronounce his name? It was the prothonotary warbler—whole head and neck bright yellow, back olive-green, wings and tail ash-blue. This was not the first time I had seen this species; where do you suppose I saw my first prothonotary? Away down in Louisiana in a boggy woodland several miles from the city of New Orleans, south of the Mississippi River. There is reason to believe that these two rare feathered mites breed in the neighborhood of the summer resort. You must look for the nest of the prothonotary in holes of stumps and snags about swampy places.

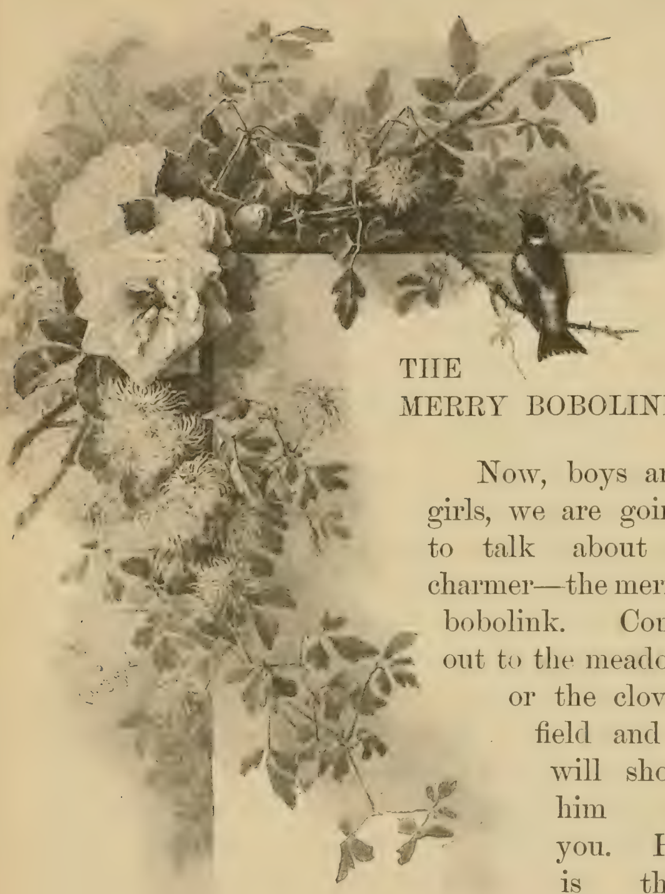
I must tell you about the most exciting discovery of my summer outing. Several of us were rowing across the lake one quiet evening, when, as we approached the opposite shore, we were greeted by a tremulous little trill. I pushed for the shore as rapidly as I could, and soon heard the scolding chatter of two little birds in the deep grass, now and

then varied by the quaint trills just heard. They were marsh wrens—the little chatter-boxes. For half an hour I watched and listened, and then ventured to wade out into the deep grass a few yards, the birds scolding still more loudly.

What was this little green ball in the top of the grass directly before me? I bent over to examine it more closely. A nest! Yes, a marsh wren's nest, the first I had ever found. And what kind of a structure do you suppose it was? A ball about six inches in diameter, the green grass blades above being bent down and deftly spun over the top, so that the dry grass could be seen only by close inspection. And the ball was hollow, though the walls were quite thick. Where would you have looked for the door to the cozy bedroom within? It was at the side—a small round hole just large enough to admit the bird's body, partly screened by grass stems.

It was, I think, the most cunning nest I have ever found. How cozily the little madam could sit within on her eggs! Then the top was so covered with the green grass that it was completely disguised from keen-eyed hawks that may have circled overhead looking for quarry. It was only by an accident that I

espied it. It was a new nest, containing neither eggs nor nestlings, proving that the marsh wrens breed rather late in the season. One would naturally expect these quaint birds to behave in an odd way.



THE MERRY BOBOLINK.

Now, boys and girls, we are going to talk about a charmer—the merry bobolink. Come out to the meadow or the clover field and I will show him to you. He is that handsome bird whose back is white like a miniature snowdrift, his hind neck light yellowish or buff, and the rest of his plumage glossy black. You can not mistake him for

any other bird when he wears his wedding suit, for he is just like himself and not like any of his fellow-tenants of the meadow.

But you may know him in another way. No other bird is so fond of rehearsing his song on the wing. His usual method is to start up into the air from the grass or a fence stake, fly across the meadow, or circle around several times, and finally settle down gracefully into the grass again, singing all the while in rich and varied tones that bubble up from his throbbing bosom.

His song, you will notice, is rich and varied, the notes leaping and racing from his throat as if each were trying to reach the outdoors before the other. His voice has a kind of metallic ring, as if several small silver bells were pealing in his throat; at the same time his tones come out in a sort of gurgle, making you think that he must carry water in his throat. One of the runs of his song which occurs frequently sounds very much like the word "bobolink," from which he gets his name, and a jingling name it is.

Washington Irving has written a most charming article on the bobolink, which some of you may have read in your school readers. Our merry minstrel's mate looks very different

from himself, being dressed in a plain yellowish-brown suit. For that reason Bryant calls her "Robert of Lincoln's Quaker wife." You never would suppose that she was the wife of so gallant and gayly-dressed a husband if you did not see them in each other's company. She is modest and quiet, hiding her nest in the grass, often so cozily that it is difficult to find. How do you suppose I have contrived to discover the nest of this bird? In this way:

In breeding time I conceal myself in the bushes or tall grass at the border of the meadow where I can overlook the whole grassy place. Then when I see a female flitting about, looking for food or preening her feathers, I watch her closely, until at length she flies down into the grass. Keeping my eye on the spot, I make a bee line for it, and usually succeed in starting her up from the nest near the place into which she has dropped. It often requires a good deal of patience to do this, as the bird will refuse to go to her nest for a long while. Then sometimes she will drop into the grass at various points, and when you steal up to the spot, there is no nest to be found. She frequently alights at one spot, and then creeps through the grass out of sight to the place some distance away where her nest

is hidden. Thus, you perceive, hunting bobolinks' nests is not so easy a task, especially beneath a broiling sun.

A pretty picture is a male bobolink wading through and climbing over the deep clover when it is in bloom, his white and black trimmings contrasting sharply with the green and red of the grass. Sometimes he will stand on the top of a tuft of clover, revealing his entire form; then he will sink completely out of sight for a few moments, and presently reappear, perhaps showing only the white of his back and the buff of his nape.

As the season advances bobolink becomes less musical; there are little ones in the nest which he must help to feed and protect, for he is not so fine a gentleman that he will not work. When the young birds are out of the nest and the time approaches for leaving their summer home, the entire colony of bobolinks will gather in a flock and wheel around over the fields, taking flying exercises, and then, before one is aware, they have suddenly disappeared, going to the reedy swamps and rice-fields of the South. Mr. Bobolink lays aside his gay wedding suit and puts on a coat that is almost like that of his plain brown mate.

A LOWLAND TRILLER.

Two birds especially are to blame—bless them for it!—for my ardor in the study of feathered people—the song sparrow and the goldfinch. It was a good many years ago—more than I care to tell—when, one day of spring, while reading a book by a delightful author on Nature and birds, I became so excited over the field that seemed to open suddenly before me, that I could not remain indoors, but rushed out to learn what I could see with my own eyes.

In the maples along the streets the goldfinches were singing their childlike lays. How beautiful they were! And yet I had probably often heard them before without even a thought of their sweetness. But a still greater surprise was in store for me. A broad, winding river, whose banks were embroidered with bushes and trees, flowed past the town only a block from my house, and thither I hurried. What were those rapturous trills that came up from the bushes on the banks on both sides of the

river? Some of them were so sweet and sad that the old longing to be a boy again, free from care and anxiety, seized me in its grip. I had never before heard music that went so deep into my soul.

But at the time I could not discover the name of the singers, so ignorant was I of birds, and it was some time afterward—months, if I remember correctly—before I knew that the song sparrows were the trillers that had stirred such a sudden and intense love for birds in my heart. That was the day of my awakening, my new birth. Before that I had been asleep, so far as the birds were concerned. With some trouble I procured a bird manual and began my avian studies in earnest, and ever since they have been a source of unfailing delight.

My own ignorance seems to be shared by many others. I am reminded of an incident that illustrates this fact. One day in autumn, while walking with an old farmer friend across the small hollow that lay between his house and barn, I called his attention to the pleasing trills of the song sparrows. His reply was that every one of these birds ought to be killed; that it had been a great blunder to introduce them into this country; that they were

a "great nuisance." Of course I had to correct his ornithology by telling him that the sweet minstrels were American birds and quite distinct from the English sparrows which he was berating.

His ignorance of the bird life around him gave me food for reflection. He had been living at this old homestead for at least half a century. During all that time the song sparrows had been trilling merrily about the house and in the meadows of his broad farm, and yet he had never learned to distinguish them from that ill-mannered foreigner, the English sparrow. Verily, as the Scripture says, there are persons who, "having eyes, see not." It is time that we Americans were learning that we have native sparrows and that they are very charming birds. Among them none are more captivating than our versatile song sparrow.

Yes, it was the mottle-breasted little triller of our lowlands that had as much to do with making me a bird lover as anything else. I am greatly in his debt. I make my bow to the song sparrow, and never tire of his trills.

You will find his dwellings in marshes, along streams, and in low grounds. He seems to be especially fond of damp places, and you may often see him hopping along the margin

of the stream like a sandpiper, or creeping about somewhat like a mouse under the grasses and weeds. In level countries almost every low place where a little water flows in wet weather is sure to have a pair or two of these merry songsters.

Their nests are usually built in a tuft of grass on the ground, sometimes hidden quite cozily, and at other times more or less exposed. From four to six eggs are laid. Very often, when you approach the marsh or lowland where their nests are, the males will begin to sing their gayest tunes, perhaps to attract your attention from the grassy cottages to themselves, or to make you believe that birds which are so happy could have no nests near by to be uneasy about. But if you go too close, their songs will be turned into hoarse little chirps that express a good deal of anger and alarm.

The entire breast of this sparrow is mottled with dusky spots, and in the center of the chest there is a large dark blotch, by which you may readily tell the song sparrow from his cousin, the grass finch, a bird of about the same size, which Mr. Burroughs calls "the poet of our upland pastures." There are many species of the sparrow family, and you should learn to

know them apart at sight. At first they may look almost alike to you, but by and by you will have no trouble in distinguishing them.

In one respect the song sparrow differs from nearly all his relatives, most of whom have one trill which they repeat at intervals, only now and then varying it a little; but our lowland musician sings a large number of tunes, some twenty or more, with an ease and skill that are delightful. Some of them are soft and low, as if intended for the ears of his mate or nestlings alone; others are pitched to so high a key that the sound goes echoing across the marsh like a bugle; some are very mournful, coming, it would seem, from a broken heart; while others are so gay and rollicking that you fancy the singer must have fallen heir to a fortune.

Thus it would seem that the song sparrow revels in variety; he disdains humdrum above all else. Nothing is more foreign to his taste than a musical rut, and you never can be sure when you have reached the end of his *répertoire*. After discoursing in one strain for awhile, he will turn to another with as much grace and skill as a *prima donna* who wins an encore.

Sometimes when I go out to the swamp

where he loves to dwell, he will flit to a perch on a bush or sapling and regale me with an exquisite solo for a minute; then he will probably turn around on the same twig and chant another lay. Presently he will swing himself to a higher perch and break out into a third and louder strain that throbs across the marsh. As if this were not enough, he will drop down into the copse out of sight and sing a soft, pensive lullaby or madrigal, so tender, so ravishing, that one almost fancies it must come from dreamland. I have often heard him trill from four to six variations within ten or fifteen minutes.

His arias are composed of somewhat prolonged notes and rapid runs. Sometimes he opens with a trill and closes with several long syllables. More frequently this order is reversed. He often begins with one, two, or three long notes, then follows with an exquisite trill, and makes a climax by closing with a loud, long-drawn syllable. The long notes sometimes come near the middle of his song. The fact is, the position of the various parts of his carols is constantly shifted, according to the mood of the happy little minstrel.

Nor must it be supposed that these notes and trills are the same in key and quality of tone.

Far from it. The trills are soft and low, loud and clear, sometimes even harsh and broken, more frequently exceedingly sweet, cheery, or plaintive, as the bird chooses. The long notes are often loud and swelling, making an enchanting crescendo, and then they become subdued and die away in a cadence of chastened sweetness. Seldom are two songs delivered in precisely the same key.

Yet there is something about our minstrel's songs that always marks them for his own. You never mistake any of his score or more of trills, varied as they are, for the song of any other bird. He never borrows a tune from his neighbors, but always sings his own compositions. He is an original little fellow, you see. Never does he make the mistake of trilling the run of the grass finch, the chippy, or the bush sparrow. Shall we call him the Mozart of the sparrow chorus? No bird deserves it more, for he will sing all the year round in any latitude, if the weather is not too cold. Often I have heard him in January, February, and March, even when there were flakes of snow flying in the air. The best singing I ever heard him do was in February, during a spell of summery weather. But when the extremely hot weather of July and August is at hand, silenc-

ing nearly all other songsters of field and wood, this blithe little speckle-breast tells the story of his constant good temper by trilling his most cheerful strains.

My monograph would not be complete without the recital of my observations on this winsome bird during a recent winter and spring. The winter had been unusually rigorous, driving the sparrows into a more cordial climate for a couple of months. In the first week of February the weather turned quite bland, and then the little lyrists came back in full force. How they sang! Concert followed concert in celebration of their return to the old home. At first they seemed to be a little out of tune, but soon their voices regained their wonted power, and I never heard them sing more gleefully. It was indeed a song carnival. On pleasant days they almost split their throats vying with one another in the lyrical contest; but cold weather did not stifle all their music.

The last day of February, for example, was raw, with the wind blowing from the east and the snow flying in spiteful gusts. I walked out to the swamp to see whether my song sparrows had survived the "cold wave." Indeed, they had. Several of them sang most sweetly.

Yet the weather was so cold that, although I was warmly clad, my hands and feet were tingling before I reached home.

On the same day I saw one of these birds fly down to the stream amid the bushes, hop to the edge of the ice, and take a long drink, looking up at me in a cunning way and saying with his beady black eyes, "A bird must drink in cold weather as well as in warm." How red his little bare feet looked on the ice!

On the 2d and 3d of March the snow lay nearly half a foot deep on the ground and the wind howled dismally about the house, but a brave little sparrow living at the pond on the commons trilled "his psalm to the wintry sky" as if it were a pleasant day in June. Ah, this songster is a hero and deserves a sonnet!

Not all song sparrows belong to the tribe of "country cousins," as one writer has said. While they are not be found in the heart of the city, some of them love the suburbs. Not five rods from the street on which I live a number of these birds make their dwelling about the bush-fringed basins on the commons, where they construct their nests and rear their young. Almost every morning on my way down town I hear a song sparrow rehearsing his matins right in the midst of a cluster of

houses. He sings with as much confidence and gusto as his rural cousins in the distant marsh.

I have said that he mostly dwells in lowlands, and he does; but I have also found him far up a mountain side where there was wet ground covered with bushes. A damp place is what he seems to want, whether it is low or high. The song sparrow will make a pleasant pet, being very tuneful and easily kept on various kinds of seeds. Still, it is much better to study him in his pleasant outdoor haunts.

TALKING BIRDS.

FAMILIAR as the parrots are for household pets, it is surprising how little is really known of them in a scientific way. A satisfactory method of classifying them has not yet been decided upon by students of birds, and far too little is known of them in their native wilds. Most of my readers, especially if they have had the privilege of visiting the zoölogical gardens of some of our large cities, have doubtless noticed that there are a large number of species in the parrot family.

The best division of the parrot family seems to be the following: *Stringops*, *Nestor*, and *Psittacidæ*. Among the most interesting kinds are the parrots proper, which have short and even tails; the macaws, including the parrakeets, whose tails are graduated, with the two middle feathers slender and much longer than the rest; the cockatoos, which have a beautiful crest, sometimes of various colors; the lories, and the broad-tails.

Most of the parrots dwell in tropical cli-

mates, and are found in America, Africa, southern Asia, Australia, and many of the islands of the Pacific Ocean. Many of them are very beautiful in plumage, having such a variety of brilliant colors that they flash like jewels as they swing themselves on the branches. Their voices do not well correspond with their gorgeous attire, for they screech and cackle and cry until the woods echo with their disagreeable din.

You seldom see one of these birds except in a cage, and perhaps you have the idea that they can scarcely fly at all, but are adapted only for clinging and climbing. In their native state, however, many of them are very swift and agile on the wing. Mr. Audubon, in his interesting account of the Carolina parrakeets, a species very recently extinct, says that their flight is rapid, straight, and continuous through the woods or over fields and rivers. As they fly they incline their bodies from side to side, so that the observer can sometimes see their upper parts and at other times their lower. They veer from a straight course only for obstacles, such as houses and tree trunks, glancing aside in a very graceful manner. On reaching a spot where food may be found, instead of alighting at once, as many

birds do, the parrakeets take a good survey of the neighborhood, passing over it in circles of wide extent, first above the trees, and then they gradually drop lower until they almost touch the ground. Suddenly they sweep upward into the tree where they expect to get a supply of food.

Much of their time is spent in the trees, climbing about in what seems to us an awkward way, now hanging by their claws, and now by their stout, curved upper mandibles, the muscles of their necks being very strong. And where do you suppose these birds roost? Audubon says that their roosting places are in hollow trees and the holes chiseled out by the larger kinds of woodpeckers. At dusk a flock of these parrakeets may be seen alighting against the trunk of a tree in which there happens to be a large hollow. Just below the entrance they cling like woodpeckers to the bark, and then crawl into their warm couch for the night.

But we are most interested in the power these birds possess to talk and imitate the human voice. Not all the species have this peculiar gift; it is confined chiefly to the short and even-tailed kinds, such as the common gray parrot, and several others. The tongues

of the talking species are large, broad, and fleshy at the tips.

Many interesting stories are told of the mimicry of these talking birds, and of the almost human intelligence they display. They seem to enjoy fun, although there is always a serious look on their faces, showing that, like the best humorists, they do not laugh at their own sport, however much they may be amused. A gray parrot in my neighborhood is a great whistler, and utters all sorts of shrill noises, which sound like a boy making fun of you.

His home is just across the street from a church. One evening while the young people were having their prayer meeting I heard a queer whistling outside, and thought it must be a mischievous boy trying to disturb the service. The parrot had just come into the neighborhood, so that I was not yet acquainted with his tricks. I bore with the whistling as long as I could, and then hurried out of the church, to give that unmannerly young man a piece of my mind and order him from the premises. In vain I looked around for him. Where could he be? Presently I espied Mr. Parrot across the street on the porch of a friend's house. I stole back into the church without saying "nothin' to nobody," as the boys

say; but I did not get much good out of the remainder of the meeting; I was too much amused at my blunder.

A neighbor of mine had a parrot which possessed remarkable talking powers and was extremely jealous of any attention paid to her mistress by a stranger. The fact is, she wanted to put the ban on all visitors, and would sometimes attack them when she was given the freedom of the room. Of course, she could say very pitifully, "Polly wants a cracker," with a peculiar stress on the last syllable of the last word.

When a visitor came whom she did not fancy, she would often cry in a loud voice, "Rattle-trap! rattle-trap!" as fast as she could repeat it, so that she had to be hushed before the conversation could proceed. Some of her mistress's callers seemed to amuse rather than anger her, and so she would break into one peal of laughter after another to drown the talk. She was very fond of her mistress, and would often perch on her shoulder and caress her, saying, "O-o-h! o-o-h!" in her most affectionate tones.

When her mistress stepped into another part of the house or over to her neighbor's, the parrot would call, "Phibby! Ph-i-i-b-b-y!"

which was her way of pronouncing Phœbe. A favorite place for her cage was by the window looking out upon the veranda, where she could see her master as he came home for his meals, and as soon as she espied him she would cry with all the joyfulness of a child, "Mas*ter*! mas*ter*!" always putting the accent on the last syllable.

One day a woman living in another part of the house had several visitors. Polly's mistress was not at home. The visitors were anxious to see the bird, and so Mrs. K—— opened the door between the two apartments and stepped into the room where Polly had been left. The bird was sitting on top of her cage, and no sooner had she seen her would-be caller than she screamed with rage, clambered down from her perch, and rushed toward the intruder. Mrs. K——, in her fright, sprang upon a chair and held her skirts out of Polly's reach. When Polly saw that she had treed, or rather chaired, her caller, she broke into peal after peal of laughter, as if she realized the ridiculousness of the situation. She kept the woman on the chair until she had had her fill of sport, when she walked solemnly away, leaving her frightened guest to step down and hurry home.

Polly's misadventure.

A small girl in the neighborhood was the object of Polly's special dislike, and whenever she came into the house the bird would repeat, in scornful tones, "Don't like her! don't like her!"

A serious mishap overtook Polly one day—one that might have proved fatal. She had a sort of rack about five feet high, on which she spent a large part of her time. On the day of which I speak the rack was placed out in the summer kitchen, where her mistress was at work. Under the floor there was a cistern, which was reached by a trapdoor, and this door happened to be open. In some way Polly's rack was thrown over, hurling her into the cistern, where she paddled about on the cold water, crying at the top of her voice. At the same time her mistress, almost beside herself with fright, and entirely helpless, rushed about the house calling, "Polly's in the cistern! Polly's in the cistern! Oh! oh!"

I was, fortunately, not far off, and hearing the alarm, rushed into the kitchen, and thrusting the water pail into the cistern with a pole used for that purpose, succeeded at length in getting it under the poor bird, so that she could seize the rim with her claws. How she laughed when she was lifted out! The

whole house echoed with her outbursts of merriment. You may depend upon it, however, she fought shy of the cistern after that day, always going around it in the most careful way.

A SWIFT-WINGED TRIBE.

You have seen them—the swallows—gliding through the air with the swiftness of the wind or poising for a moment on the wing and then darting toward the ground as if on the point of committing suicide by dashing themselves to pieces. But so dexterous are they that one turn of their balanced wings sends them up again like an air-filled balloon.

No birds are more constantly on the wing. It is in that way that they take their food. Perhaps you have never thought how perfectly they are adapted in every way for doing this, just as if the Creator had said in the beginning, "I will now make the swallow tribe to tilt and poise and wheel in the air."

Then he made their bodies very light; gave them plenty of plumage, very buoyant and yet so firm that it is not easily ruffled by the wind; attached to those bodies broad, strong wings and forked tails with which to propel and steer themselves. Withal, he gave them the precise form which is best adapted for

speedy movement—the form that men have found makes the swiftest sailing vessels.

Besides, they have very small and weak feet, so that they have little temptation to walk about on the ground or stand on perches for a long time. Yet they can cling to upright and even projecting walls if there are any protuberances, because their feet are formed for that purpose, and their tail feathers are so stiff that they help to brace their bodies. Their sight is very keen; they can espy a tiny insect afar off even while bounding swiftly through the air. Their mouths are wide at the gape, and so are their gullets, and this aids them in catching and swallowing their food while on the wing.

You have often seen them flying swiftly over the surface of a river, pond, or lake, sometimes dipping lightly into the water. Perhaps their purpose in grazing the water is to rinse their plumes, but their main object in these long, reaching flights is to catch the insects that rise from the surface of the water. I have often watched them taking their meals in this way, especially of an evening. A small, white, fuzzy insect starts up slowly from the water, probably trying its gauzy wings for the first time, but it does not rise more than a few feet

before the sharp eyes of a swallow espy it; then the bird makes a swift swoop for it, and never misses its aim. There is no escape for the insect, which is slow of movement. In this way thousands of insects are devoured in a single evening. Nothing could be more graceful than the flight of these birds at such times. Usually they fly a little lower than the insect aimed at, and as they approach it, rise in a swift, graceful curve, whose highest point is attained when the prize has been secured. Of course, the insect is seized in the bird's beak and swallowed at once, and perhaps that is the reason these birds are called swallows.

Well can I remember that, in my boyhood days, I thought a swallow was a swallow, and never knew until long afterward that there were many species of this family of winged athletes. None of the bright young readers of this book are so ignorant, I hope; but if they are, I ought to be the last person to make sport of them. Think of the various kinds of swallows—barn swallows, cliff or eave swallows, white-breasted swallows, bank swallows, rough-winged swallows, and white-rumped swallows, all of them skimmers of the water and cleavers of the air.

But you must not mistake the common chim-

ney swift for a swallow, although it is often called the chimney swallow. The fact is, odd as it may seem, scientific men have put the swifts and swallows not only in different families, but even in different orders, so that the former belong to the same class as the nighthawks, whip-poor-wills, and humming birds, while the latter are classed with the perching birds, even though they fly more than they perch. However, the purple or house martin, so well known about our country homes and in many of our cities, belongs not only to the same order but also to the same family as the swallows. They—the martins—are just as closely related to the barn swallow and the cliff swallow as those two birds are related to each other.

You know the cliff swallows, do you? But perhaps you do not know that the cliff swallow and the eave swallow are one species. Before man comes into a country where they dwell, they build wholly upon the walls of cliffs, in the small holes or beneath the overhanging shelves; but when barns are put up, they seem to think that the covered space beneath the eaves is a still better site, and so you have often seen these places lined with a solid row of adobe cottages. Perhaps you have watched the birds while engaged in house building. They

fly to a bank and fill their mouths with the stiff clay, and then, flying to the eaves, spread on their mortar layer upon layer, until they have made a cozy apartment with a neck, sometimes quite long and curved, for an entrance. The inside is lined with straw, wool, and feathers. It is said that when a place has been used for three or four seasons the birds leave it for another site, perhaps because the mud gradually loses its clinging quality or becomes brittle.

Among the enemies of the eave swallows are the bluebirds, which often appropriate their adobe houses for their own use, and usually succeed in driving the rightful owners away from the immediate premises. A friend told me that a pair of bluebirds once decided that a swallow lodge would make them a good nesting place, and so they took possession of it while the rightful owners were absent, and held them at bay on their return until they gave up the contest. Mr. Bluebird, for all his dainty ways and soft voice, is quite a pugilist, and dearly loves to have his own way.

In the Western States, in places where there are very few barns, the cliff swallows still follow their savage customs, so to speak, as does the Indian who is not yet civilized.

Here, on the steep cliffs of the ravines and cañons, they build nests by the hundreds, living in colonies. A cliff may have a very warty appearance in spots on account of these nests, which seem to be built in clusters, sometimes containing as high as two hundred separate domiciles. One writer estimates that on the face of a single cliff in Kansas there were between two and three thousand nests. They were gourd-shaped, built of red clay, fastened in the interstices of the rocks, and sparsely lined with grass. Now and then a straw was wrought into the masonry.

While the eave swallows are engaged in house building on the outside of a barn, the barn swallows are often engaged in the same occupation within, building their nests on the sides of logs, rafters, and joists. Mud is also used in these nests, but it is mixed with straw —these birds will not use "bricks without straw"—and the structure is open at the top like the nests of most birds.

The tails of the barn swallows are deeply forked, which is doubtless an advantage to them in clinging to the sides of the various timbers on which they build. Their flight is also very swift, and the rapidity and precision with which they dash through small holes cut

in the gables of barns is little short of marvelous. They do not stop to perch first upon the edge of the hole, but close their wings and dart through like an arrow.

While walking along a stream, have you not often noticed that the bank, especially if it is rather high, is punctured with small holes? Most likely they are the nests of the bank swallows, or sand martins, hollowed out by the birds themselves to a depth of from two to four feet in the soft, sandy soil, and slightly enlarged at the end for the nest proper—a strange habit for bright, swift-winged denizens of the air. Why should they choose to live in a damp cellar when they might have a pretty cottage on a limb out in the open air and pleasant sunshine? Some birds, like some people, have peculiar tastes.

If you can get near a barn swallow, notice what a lustrous steel-blue coat he wears. The coat of the cliff swallow is of the same color, but his other markings are different. The upper parts of the white-breasted swallow are glossy green, which catches the sun's rays and throws them into a sort of emerald rhapsody; but the plumage of the bank swallow and rough-winged swallow is much plainer, being a lusterless gray.

Sometimes several families of young swallows which have just left their nests may be seen sitting in a row on a fence rail or some other perch, waiting for their parents to bring them their luncheons, and all the while keeping up an incessant chirping. You may get quite close to them, but just when you have made up your mind that they are still too young to fly and that you can catch them, away they skim, with almost as much ease as their elders.

A bare mention can be made of the tree swallows, which build their nests in the deserted woodpecker holes of trees in the vicinity of marshes, ponds, and rivers, the beautiful violet-green swallows of our Western States, and of the rough-winged swallows, which nest in the crevices of stone walls and bridge arches.

MARSH WRENS.

I THINK it will be interesting to tell you about two little creatures of America which are indeed bundles of good cheer—the long-billed and short-billed marsh wrens. Let us first make our bow to the long-billed marsh wren, a very cunning little bird which selects a home in boggy places. Like many people who can afford it, he spends his winters in the Southern States, and then comes north in the summer, making his presence known by his lively, chattering song and quaint behavior among the reeds and grasses of the lowlands.

Near the eastern shores of the Middle States he chooses the salt marshes for his summer home, and also the tide-water rivers that empty into the Atlantic. At other places almost any reedy swamp satisfies him. Here is a problem for our young readers. In the Eastern States he is seldom, if ever, found north of Massachusetts, and yet some of his brothers and sisters of the same species spend the summer away up in Greenland. How they con-

trive to get through Vermont, New Hampshire, and Maine without being seen is a question; and why they pass those States and never tarry for the summer is another question still more difficult to answer.

During the summer they are seldom found far from the rivers and swamps where they dwell. They feed on insects and their larvæ, and on a certain kind of green grasshopper that lives amid the grasses of low grounds. Their song is a queer ditty, being a rather low, creaking sound somewhat like that produced by air bubbling up through the mud or boggy ground when you tread upon it. One author describes this song as a sharp, metallic twitter. Another says it begins with rather a harsh, squeaking note, followed by a rattling twitter, and ends much as it began.

It is interesting to note the oddly-constructed nest of these birds. In some respects it is like the little nest of the reed warbler, but in other respects it differs from it very much. It is hung among culms or reeds by being fastened at the sides, and often it swings above the water of the marsh.

However, it is more bulky than the reed wren's and is globular in form. Its walls are made of wet rushes plastered together

and made firm with mud. It is about the shape and size of an ordinary cocoanut. It is closed all around and above, but a small hole is left at the side for a doorway, usually nearest the top, though sometimes, strange to say, nearest the bottom. Notice how curious. The upper edge of this door-way projects over the lower edge like a penthouse, so that the rain can not enter. What a cunning contrivance! The hole is sometimes so beset with down that it is closed up, though, of course, the birds can slip in and out by pressing the down apart.

The nest is lined with fine soft grass and sometimes with feathers. Do not the little ones have a cozy room to sleep in until they are able to venture out into the wide, wide world? When the walls of the little house become thoroughly dried they are so strong that they resist all kinds of weather, and they are bound so firmly to the adjacent culms that they can not be broken loose by any stress of wind. When built near the ocean these nests are placed above the reach of the highest tides. Six eggs of a delicate dark fawn color decorate the bottom of the globular dwelling.

When nervous or frightened, the marsh wren presents a really comical appearance.

His head is thrown up and his tail thrust forward, so that they almost touch, making the bird look like an irregular ring or triangle darting about among the weeds and bushes. Very often, like the reed wren, the marsh wren clings sidewise to the stem of a cat-tail; then he may take it into his head to grasp two culms near together, one with each wiry little foot, so that as they bend outward his legs are stretched apart in a horizontal line.

Still another prank must be described. He will sometimes toss himself up in the air, then drop down into the weeds with a graceful flutter, singing his little song while going through the droll performance. No less odd, but vastly more puzzling, is the fact that these wrens build more nests than they need for breeding purposes, and why they do this is a disputed question. Some think that the males build them to give themselves something to do while their spouses are hatching, and they occupy them for shelter and sleeping apartments. Others are disposed to think that they are built to lead the nest hunters or other foes astray, as the birds always trail and tumble toward these nests when a supposed enemy disturbs them. Another opinion is that they are constructed merely for ornament.

The short-billed marsh wren is much like his long-billed relative, though the close observer can readily tell them apart. He does not choose such wet, boggy places, but rather marshes that become dry in the summer time. The reason of this is not far to seek, for he builds his nest most frequently on the ground or very near it, and never above standing or flowing water. Although the nest is quite similar to that of the long-bill, it has no mud plastered into the walls, and is, therefore, not so compactly built.

When the nest is approached, the birds hover near the intruder, chattering and scolding in a violent manner. These birds also build a number of nests that they do not use. They are very difficult to see, but their noisy chattering among the reeds proclaims their whereabouts. Their song is not very musical, but is pleasing to the lover of out-of-the-way sounds in Nature, because it enlivens the otherwise quiet and lonely marshes. No bird could be more adept at sliding up and down the culms of the grass and sedges, tipping, tilting this way and that, and tossing its tail in every manner imaginable.

THE VIREOS.

Very interesting birds are the vireos, and I am sure you will like them if you once learn to know them. Perhaps before you see their flitting forms you will hear them singing in the willows or maples, and then you may have to look a long while before your eye catches them. The chief reason why they are so hard to see in the trees is that their colors are various shades of olive, and therefore closely resemble the green of the leaves, especially when the sun gilds them.

There are various kinds of vireos in this country—the warbling, red-eyed, white-eyed, Philadelphia, blue-headed, yellow-throated, and several others. All of them build their nests after the same general pattern; that is, they are fastened by the rim to a branch and are not supported at the bottom—a little basket swinging from a bough, making a dainty hammock for the mother bird and her brood.

The warbling vireo is a familiar little bird, often choosing the trees about a farmhouse

Vireo (*vireo belli*).

for a nesting place. One summer I found a nest with several little ones in it suspended from the branches of an apple tree not more than three rods from a friend's house. By climbing to the top of a stepladder I could peep into the rocking cradle, and see the fuzzy babies within. But the parents did not in the least fancy my making so free with their nest. They called and scolded and screamed as only vireos can, and even dashed at me, snapping their bills savagely in my face. The nest was fastened by the rim in the fork of a limb,

and was bound to the twigs over halfway round.

What a musician the warbling vireo is! He does not sing a little run and then stop for a few moments, as the sparrows do, but keeps up an incessant flow of song-talk often for hours, scarcely pausing long enough to take breath or swallow an insect. It sounds as if the bird were talking to himself in a tuneful way on some theme that did not require very profound thought. You have seen a musician sit down before a piano and compose his music as he played. Well, that seems to be what our little minstrel is doing, except that he sings, and does not play on an instrument. Some one has said that he seems to select a text and preach a sermon on it, and for that reason he is sometimes called "the preacher." That is quite apt, I must confess; but if he does preach he does not give his sermon all his attention, for while he discourses he flits about from twig to twig, picking insects for his luncheon. He is the only parson I have ever heard of who can eat and preach at the same time.

There is a good deal of variety in his song. Now he runs up to a very high note in the scale, and now to a low one. And what does

he seem to say? "Dear, de-a-r, this is pleasant, pl-e-a-sant, swinging in the branches. The sun shines so brightly, so-o b-r-i-i-ghtl-y-y-y! I'm so happy, hap-p-y-y, h-a-a-p-py!" All this is blended and woven together in a really wonderful mesh of song.

As a musician, however, he has a rival in the red-eyed vireo, whose song is shorter, it is true, but louder and more vigorous. This bird is larger than our little friend just described, and seems to like the company of warblers in the autumn. Again and again I have found a single red-eye flitting about in the woods with an army of warblers, as if he said: "I like these little tilters better than my own kin; I can agree with them better. Sometimes one's own relatives are the hardest to get along with."

My jolly, nervous little friend, the white-eyed vireo, does not take to the woods as do his relatives, but selects low thickets where he can hide himself when he wants to, sing his rolling, earnest tunes, and build his nest in some low sapling or bush. If you go too near the home of these birds in the breeding season, you will get the worst scolding you have ever heard, as they dash about the bushes without one bit of fear of being seen themselves, their

The white-eyed vireo.

white eyes showing like tiny marbles in the sides of their heads.

Many bird students have gone quite into raptures over the song of the white-eye. Mr. Burroughs thinks he mimics the songs of other birds, and that in this respect only the mocking bird goes ahead of him. Another writer says that in July and August this little bird sometimes sings with so much power and variety that you think at first there must be three or four songsters in the bushes, each trying to distance the other. He also declares that the white-eye imitates the notes of other birds, among them those of the robin, wren, catbird, flicker, goldfinch, and song sparrow.

In my neighborhood, and, indeed, in the entire State of Ohio, except, perhaps, in the extreme northern part, the blue-headed or solitary vireo is only a migrant; so I have had no chance to study its breeding habits. It has several times favored me with a song in the spring, and even in the autumn it occasionally breaks into a queer strain that is half music and half squeak. Its true song in its northern summer home is said to be very fine, and its nest a handsome little structure, hung in the fork of a branch in some quiet and secluded place.

A WINGED FISHERMAN.

SHALL I ever forget a bright spring day when I sat on the slope beneath a tier of shade trees and watched the bobolinks circling and poising over the meadow below me, hurling out their wild tumult of song on the glad air! It was, indeed, one of my most memorable "bird days," and if my life were a desert—which it is not, I assure you—I should call that day an oasis, a fair, blooming Paradise.

But, although my attention was bent for the most part upon the bobolinks and meadow larks, every once in a while I would see a kingfisher dash up over the hill from the creek in the valley, holding a fish in her long bill. It was sure proof that she had a nest with young somewhere in the neighborhood, and I determined to investigate later in the day, when the meadow birds would loosen their hold upon me. It was nearly dark before I could get away. Knowing of a deep gully cut in the hillside by freshets, I turned aside from

my course homeward to examine it. Sure enough, there was a hole in the steep, sandy bank, just as I had expected, and I felt certain it must be the nest of the kingfisher.

But it was too late to tarry, and so I hurried home. In a day or two I went back to make certainty doubly sure about the hole in the bank. A hundred or more yards away, in a sloping field, I flung myself on the ground, and determined to wait and watch. And I waited a good while, too. By and by, however, there was a loud, rattling cry, and then the kingfisher came sweeping up from the valley with a fish in her beak. But her sharp eye soon espied me, and then she set up a series of screams that made the welkin ring, and that proclaimed her secret to all the world. It was a long time before she would leave the apple tree in which she had taken refuge, and I was going to miss my dinner; but at last my patience was rewarded; she dashed to the very hole in the bank which I had previously seen, and dropped her quarry into the hungry mouths within. Then she swept like an arrow down the hill to the creek. I could not bring myself to dig out that nest, much as I wanted to see its contents, for it seemed too heartless a deed.

Had I done so, I should have found an orifice from three to six feet long, extending straight in, or perhaps at a slight angle, with the nest at the end, occupied by six or seven baby kingfishers. Besides the little birds, there would very likely have been a number of bones of fishes in the nest which the old bird had swallowed and then disgorged in the form of pellets.

Many, many times I have seen this agile fisherman sitting quietly on a dead branch extending out over a stream. There he would sit and watch until some unfortunate fish came in sight in the water below, when, as quick as a flash, he would dart down after it and grab it in his strong beak before the fish could collect its wits. His prey secured, the bird would fly away to some safe place and swallow its scaly prize.

Some time ago I read a story which proves that this bird, wily as it is, sometimes does not act as wisely as you would expect. It was a rather cold day, so the story goes, and a coating of ice had been formed on the ponds and streams. A kingfisher was seen sitting quietly on a branch overhanging a pond, when suddenly it dropped from its perch and dashed into the water below. The spectator expected

The kingfisher keeping vigil.

to see it rise the next moment with a fish in its bill, but, strange to say, it did not. What could have befallen the bird? The narrator of the incident says that he hurried to the spot, and soon found a hole in the ice through which the kingfisher had broken, but still the bird was not to be seen until he looked farther, when he found it dead beneath the ice a short distance from the orifice. Perhaps it had stunned itself when it struck the ice, or perhaps, having once got underneath, the poor bird could not break its way up.

Kingfishers may also be seen flying along the windings of a stream only a few feet above the water, and when they catch a glimpse of a fish below, down they plunge, and seldom fail to secure the finny prize. They are lovers of water, and prefer the vicinity of streams and lakes, and yet a certain naturalist says that he has found these birds in the desert regions of southern Arizona, far from water, feeding on lizards and insects.

These birds often poise over the water, as a hawk does over the meadow, the eye intent on the finny tribes below. If the nest is near a stream and the old birds are disturbed, the female will throw herself upon the water and flutter and flounder about as if she were

severely wounded and utterly unable to rise, all this being done to lead the intruder to wade out after her and thus fail to find her precious brood. At the same time her mate sits on a branch near by, flirting his tail, erecting his crest, and then springs out into the air, passing and repassing before his enemy with loud cries of alarm and anger.

All that has been said thus far applies only to the belted kingfisher, so familiar in almost every part of this country. However, there is also the Texan kingfisher, a beautiful little bird, its upper parts being dark green, with a white collar around the hind neck; its wings and tail spotted with transverse bars of white; its lower parts pure white, with a band of dark green across its breast. The sides are spotted with green. This bird makes its home mostly in South America, but sometimes wanders north as far as Texas and Arizona.

A JOLLY FIELD BIRD.

The American meadow lark is a most charming bird, one whose acquaintance it is well worth your while to cultivate. You can not mistake him for any other bird. Watch him as he stands yonder in the short grass of the meadow or clover field, or upon a stump or a fence post, holding his form proudly erect, his head in the air, while his golden bosom, with its black crescent on the chest, flashes in the sun; or see him as he starts up and wheels away in graceful flight, beating the air with short, sharp wing strokes and spreading out his fanlike tail with its broad trimming of white; or listen to his fine whistle as he darts like a feathered arrow across the fields: "Good ch-e-e-r-r! good ch-e-e-r-r-r!" By these signs you will know him the very next time you meet him in the field.

In my neighborhood (southwestern Ohio) the meadow larks are plentiful. Every field and meadow has its presiding geniuses, so to

speak, and at the proper season nests are easily found. The larks arrive quite early in the spring, and sometimes in the latter part of the winter, from their jaunt in the South. In 1893 they came back about the middle of February, but the present year (1894), for some cause, they did not come so early. On the third of March, which was an extremely fine day, I took a long ramble, but did not see or hear a single lark. The next morning, however, when I stepped out into my back-yard a little after daybreak, one of the first sounds that greeted me was the piercing whistle of the larks, as it came lilting across the fields.

What does that prove? That the birds must have come from some other locality during the night. Some of them were doubtless the same individuals that were here last year, and the question is, how could they tell in the night when they had arrived at the old, familiar feeding ground? Perhaps they timed themselves, though, so that they would reach this place just as day broke. At any rate, they at once heralded their arrival with song, proclaiming to all whom it might concern that they were back from their southern jaunt.

The song of the meadow lark is very fine—

a real melody. What a pity there is not more of it! It usually consists of two prolonged syllables blended together as if by a sort of loop or festoon and delivered with a swinging movement that is the poetry of grace. Is it not true that almost everything you hear makes a picture in your mind? Well, this is the picture that is produced in my mind by the song of the meadow lark when he whistles the whole run at his best:

Only the wavering line ought to be the color of gleaming gold. Sometimes it is varied a good deal, as, for instance, when the two syllables are run together as if they were one, or when the song closes with the upward instead of the downward inflection. More than once I have heard a lark in a certain meadow conclude his song with a peculiar note that sounded as if a spring had got worked loose in the music-box of his throat.

One of the lark's oddest musical performances is his air song, which is a wild, continuous medley lasting several minutes, and not delivered intermittently or at intervals, as is his other song. This air song is sometimes rung

out while the bird is poising on the wing, and at other times while he is sweeping along in straight flight, and is always sent forth in a kind of ecstasy.

If you get a chance, watch the meadow lark during his vocal performance, and you will notice that he usually opens and closes his mandibles twice during the brief strain, opening them widely when he strikes the high notes and bringing them almost together when he emits the lower ones. This will prove that, after all, the song is not a whistle produced with the mandibles in some way, as might be supposed, but a real voice tone, emitted directly from the throat. The same thing is true of the songs of all birds—the mandibles are thrown far apart to produce the high notes, as you can easily prove for yourselves if you will watch the brown thrasher, towhee bunting, bush sparrow, and so on, while they are singing.

Where would you look for the nests of these birds? Always on the ground. And very neat nurseries they usually are, though some individuals seem to be better architects than others. For instance, I found a nest in a pasture field where the cattle had cropped the grass quite short, so that the bird domicile

had really no protection, being only slightly arched up in the rear. Then I have found others that were hidden cozily in the clover, most of the nest roofed over by a fabric of dry grass, and the rest of the roof completed by weaving together the green clover stems and leaves above it. Several of these homesteads had little pathways running up to them under the overarching clover—a little grassy mansion, one might say, with its driveway or promenade leading to the door. Oddly enough, one summer I found one of these nests which was very deftly concealed and roofed over, while not more than ten feet away was another which was left wholly exposed, no attempt at concealment being made.

But where do you suppose our pretty larks roost? On the ground amid the soft grass. When I go prowling around at night in the fields, they are frightened from their grassy couches, and go scudding away, uttering their familiar sputtering call. But I verified this discovery in another way. I once had two young pet larks in a large cage, and, although there were plenty of perches, they almost always preferred to sleep on the floor of the cage in the grassy bed I spread for them. Even when I made them no grass couch, they would

squat on the bare floor and spend the night there. Other birds—red-winged blackbirds and catbirds—kept for a while in the same cage, roosted on the perches.

One day in early spring I saw two larks fighting. It was an amusing performance. At first they avoided coming into direct contact. One would leap up into the air, as if he had steel springs in his legs, and come down close to the other, which would bound away just in time. Thus they danced about for a while, and then flew over to a little grassy knoll where they engaged for a few moments in quite a vigorous set-to, flying together, rising in the air, clawing each other, and shrieking angrily. Which won the victory I never knew, for presently they flew away over the hilltop, whither I could not follow them.

TRAVELS OF THE BIRDS.

I.

Long before it became the fashion for human city dwellers to "go away for the summer" our little brothers and sisters of the air, the birds, formed the habit of summering in the cool North and wintering in the sunny South. Many birds are great travelers. There are species that spend the winter in the West Indies, Central America, and even South America, and the summer in Greenland and Alaska. Some of these voyagers are tiny birds, not more than three inches in length, like the blue-gray gnat-catcher and the black-throated blue warbler—gay little blossoms with wings and beaks. It is simply wonderful to think of the immense distances they traverse in their semi-annual journeys, sweeping over mountains, valleys, plains, and large bodies of water, stopping at intervals to rest and recruit their strength, and then resuming their airy pilgrimage. Genuine "globe trotters" some of them are.

How do the birds accomplish these journeys? Well, of course they go by the air line, not by land or water; on the wing, not on foot or by car or steamer or balloon. As a rule they go in flocks, each group doubtless being guided by some bird whose acquaintance with the route enables him to pilot them safely. Sometimes a bird becomes separated from his fellows, and then he must travel alone, or else remain for the season in the neighborhood where he has been lost, spending the time as best he can. In this way it happened a few winters ago that I had a zebra bird at my elbow every time I strolled out to my favorite woodland.

You have, perhaps, seen large assemblies of birds in the autumn flitting about and engaging in most vigorous chattering; and they have remained in your neighborhood for several days, and then suddenly disappeared. The purpose of the gathering was doubtless to arrange for the long journey southward, to see that all the birds which were to join the company had done so, to elect their leaders, and decide upon the best route to take.

In the South, when spring arrives, similar preparations are made for the journey to the North, as I have proved by observation. One

day in April I found a large assembly of chattering red-winged blackbirds in the willows of a Louisiana swamp, a few miles west of New Orleans; their conduct was precisely like their conduct in the North when in autumn they are making arrangements for the trip to their winter home in the South. A few weeks later I found a company of male bobolinks in northern Alabama holding counsel in the treetops and piping farewell to the rice and cotton fields before taking wing for the meadows and clover fields of the North. Perhaps some of them were the same birds which I found tinkling so gayly about my own home in Ohio a week later.

As has been said, it was the male bobolinks only that were holding the conference in Alabama. It is an odd fact that the males of many species of birds arrive first at their summer homes, and are followed a few days later by the sedate females, and then the mating begins in real earnest. Why both sexes do not come together is a problem that I have not yet solved. In the case of other species, such as warblers and sparrows, the males and females journey in company, the selecting of mates often taking place while the birds are *en route*, or even before their travels are begun.

Many species travel by night. Why is this? I can merely suggest as a possible reason that at night the weather is cooler than by day, and there is less to distract the birds' attention from their travels, and hence less temptation to stop by the way. The nocturnal flight of the migrating hosts may be proved in two ways: First, go out at night in the spring or autumn and you will hear the chirping of the feathered voyagers overhead as they pass in loose flocks; second, if you take a tramp to the fields and woods early on a spring morning you will find numerous species that could not be seen at all on the previous day. Besides, those who have charge of lighthouses often find that many birds dash against them, often with fatal effect, on foggy and stormy nights.

Do you ask if they make their long journeys by a continuous flight? No, they do not; most species go by stages. As the warm weather comes on at their southern winter home, they leave for a more northern latitude, perhaps a night's flight away; here they may spend a few days or a week, enjoying the pleasant weather and feeding on the numerous insects lured out of their winter quarters by the warm sunshine. By and by the birds will

Migration of birds at night.

make another nocturnal journey northward, and thus by degrees the whole pilgrimage is accomplished.

Here is an instance which came under my own eye. On the twelfth of April my train, bound for New Orleans, stopped for some minutes at a small station in northern Alabama. Stepping from the train, I got a glimpse of several myrtle warblers flitting about in the trees of the woods near the tracks. About four weeks later, on my return to the North, I stopped for several days at the same station to watch the birds, but not a single myrtle warbler did I see in the whole country round, though I traversed it for miles over valley and mountain. These warblers had stopped there for a while in April on their migratory tour, and then had skimmed away for more northern climes.

Yet some of them did not go very far—not more than eighty or ninety miles—for I found them quite abundant on the ninth of May on the top of Lookout Mountain in Tennessee, where they probably breed; while others had hied away to the distant North, some of them venturing as far as Greenland. It is somewhat curious that some species that breed in the far North will also breed in the South on the wooded tops of high mountains.

II.

I have stated that birds mostly travel in flocks. These are doubtless guided by the older members of the company, which have become familiar with the route by going over it year by year. It is evident that young birds could not find the way themselves, for my experience in rearing them by hand is that, while there are some things that they learn by native instinct, there are many other things that they must be taught.

It is said that there are certain routes that migrants are most apt to pursue in their journeys, and that they are not equally distributed across the continent. Coast lines, mountain ranges, extensive valleys, rivers, and lakes form what might be called guideposts for these winged pilgrims, so that they do not lose their way in the trackless oceans of the air. But they can not see their landmarks by night, you object. That, no doubt, is true. Yet knowing the point from which they start in the evening, the direction in which they wish to go, and the distance they can travel in a given number of hours, there is little danger of their becoming confused unless they should be over-

taken by a violent storm; and this sometimes occurs.

It must not be thought that the various species travel separately. Of course, some of them do act a little selfishly in this respect, but many species take passage together in their nocturnal journeys. This has been proved by the fact that in a single night warblers, vireos, thrushes, flycatchers, and other species have dashed themselves to death against lighthouses during a storm or a dense fog. You will also hear many different kinds of chirpings as the migrants pass overhead at night.

Some birds do not seem to go by stages in their migrations. One writer, who ought to be good authority, says that the large birds, like the cranes, herons, geese, brant, and the like, fly steadily night and day from Florida to the far North without rest, food, or water, and at a rate of speed that is almost beyond belief. This may be true, yet it is also a well-known fact that wild geese often stop at our northern lakes and at smaller inland bodies of water for rest and food, thus breaking the severe strain of a continuous voyage.

Some one has asked me to tell when the birds begin their pilgrimages. They do not all come or go at once. Some tarry much longer

than others. I will refer first to the southward-bound birds in the midsummer and autumnal procession. In my neighborhood the little redstarts and creeping warblers do not breed, but hie farther north; yet by the middle of August I find some of them in my woodland, evidently from some higher latitude, on their way to their winter resorts in southern climes. Thus the feathered "wave" from the North begins quite early. It does not come in earnest, however, until September, when it often fairly floods the woods and fields with warblers, vireos, sparrows, and grossbeaks, and by the first week in November nearly all have passed.

Yet even here there are exceptions among the summer residents, some of which seem to be determined to remain in their summering places as long as the weather will permit. Some years ago, when the autumn and early winter were especially mild, the meadow larks were whistling on the 30th of December, while a large number of song sparrows decided to remain all winter. And there is the myrtle warbler, hardiest of his family of brilliants in plumes, which I sometimes find about the woodland border during the first week in November.

When do the birds arrive from the South? The months of February, March, April, and May are the months for arrivals in our Middle States. I seldom fail to see the meadow larks, flickers, and song sparrows—and sometimes the towhees and fox sparrows—in February, from the first week to the end. During March and April the sparrows, thrushes, orioles, tanagers, woodpeckers, vireos, flycatchers, wrens, and thrashers come with song and chirp, and the first of May brings the vast army of wood-warblers and a few stragglers of other guilds.

During a visit to Louisiana in the spring of 1894 I learned some interesting facts about the behavior of migrating birds. In the North the robins are not often found in flocks except in the fall when they are preparing for the voyage South. In Louisiana they go in large flocks during their winter's sojourn there, scattering out somewhat during the day to feed, and then gathering from all parts of the country at certain favorite roosts as night approaches. They are especially abundant in those parts of the South where beechnuts are to be found.

Thousands of them are killed by pot-hunters in the South, their flesh being regarded as a delicacy. If I should eat a robin I should almost look upon myself as a cannibal. In the

North there are some famous "robin roosts" in the autumn, as Bradford Torrey has shown in one of his delightful books.

I learned, too, that the mocking bird and white-eyed vireo are both summer and winter residents of the State of Louisiana, while the nonpareils, indigo birds, and orchard orioles are only summer dwellers, going still farther South in winter, and the myrtle warbler is a winter resident, but leaves for the North in summer. Thus it will be seen that the subject of migration is a rather complex one, and that there are birds not only of many kinds, but also of many minds.

IN THE ICE-CLAD WOODS.

I.

First there came a light snowfall mingled with sleet, but soon it turned into rain which froze as it fell, covering trees and fences and roofs with a garment of ice as clear as crystal. What a wonderful sight the woods presented! The eastern side of the tree trunks and larger branches was clad in a coat of mail, and every twig and spray was held in the embrace of a cold, glassy cylinder through which its shivering form could be plainly seen. Beautiful beyond description was the thick network of the interlacing branches and twigs imprisoned in transparent ice.

What were the birds doing on a day like this? That was the question I asked myself, and I could not rest satisfied until I had answered it; so in the afternoon I stalked out to the woods with an eye to my feathered darlings, as usual. Why, of course, any one might have known that the first bird one should meet would

be that "crack" tobogganist, the white-breasted nuthatch, the bird that dashes up and down the tree boles at his own sweet will, crying "Yank! yank!" in his confiding alto, or "Kick! kick!" in his petulant soprano as you approach his haunt.

He has no fear of the blood rushing to his brain, for he really seems to prefer sliding down the trunks of the trees headfirst to hitching upward; and almost always, when he wants to chisel out a grub or a seed from the bark, he stands above it and works with his head downward. No doubt he can deliver harder blows in that position than in any other, just as a woodchopper always prefers to have the stick of wood he is cutting on a lower plane than he himself occupies. But how my feathered carpenter does exert himself, hammering, filing, prying, poking, until I am afraid he will break off the point of his slender pickax! He sometimes almost jerks himself loose from the bark, firm a hold as he is able to take with his stout little claws, and one can often hear the sound of his pounding quite a distance away.

On the day referred to the nuthatches performed their skating exploits on the western side of the trees, which were not coated with ice. They are unlike boys and girls in that re-

spect. When I gently drove them to another tree they were careful not to fly against the icy side, knowing well enough that they could not secure a foothold there. They would sometimes scramble along the edge of the ice as if strongly tempted to venture farther. No doubt they knew where there were some corn grains or sunflower seeds in the crannies of the bark, which they would have relished on that cold winter day had they been get-at-able; but of course they were beyond the reach of the birds, though not beyond their sight, held fast beneath that hard, glassy covering. Perhaps the nuthatches felt a little provoked, too, for their calls seemed to be more petulant than usual.

And how should they be aware of the presence of grains and seeds in the gullies of the bark? Because they lay by a store of such supplies in the autumn for the winter's use. I have more than once seen them doing this. On that very day I had another proof, in addition to many previous proofs, of this provident habit, for I saw a nuthatch draw a grain of corn from a crevice, and then scamper about on the tree until he found a convenient pocket in which to thrust it while he picked it to pieces and ate it; and this took place in the very depth of the woods, with no cornfield or

The icy woods.
Nuthatches.

cornbin within at least a quarter of a mile. Of course, that nuthatch, or one of its brothers or cousins, had stowed away that grain of corn a few months before, just for such a time of need as this.

In the autumn I made a little discovery which led me to add another item to the nuthatch's rather varied bill of fare. I was watching a couple of these birds hopping about on the leafy ground, or pecking vigorously at some dainty on the tree trunks. Fixing my eye on one of the latter, I approached the place where he was feeding, and found in a cranny of the bark a cracked hickory-nut shell with part of the kernel pecked out. I had driven the little diner-out away from his repast before he had finished it, for which act of rudeness he berated me roundly, little malapert, as I doubtless deserved. Then, to my surprise, I noticed that the crevices of the bark contained many of these broken shells rifled of their "goodies." Some boy or man—or perhaps it was a squirrel—had been cracking hickory nuts at that place in the woods, and the nuthatches were having a jolly feast on the leavings.

You must not suppose, however, that the nuthatches were the only birds at my elbow on the day of my tramp in the icy woods. Just

as familiar and engaging were the crested tits, or chickadees, though they did not behave in the same way. It is true, they sometimes clung to the upright trunks and branches, and now and then even ambled upward a few feet, but they are naturally perchers, not creepers. What surprised me on that day was the skill and ease with which they flitted about among the twigs, grasping the icy perches with their bare little claws as if they were not cold or slippery. Very seldom did they lose their footing, though such a mishap would sometimes occur, when a bird miscalculated his distance, or flew to a branch that was too large for his claws to twine around. Then he would slip, and there would follow an amusing scramble for another foothold.

Several of these hardy winter birds seemed to enjoy prancing around on the snow-covered ground. One of them made a pretty picture as he crept into a small tuft of grass to find a tidbit of some kind, only his flicking tail which extended out of the aperture, being visible. He made me think of an Eskimo creeping on all fours into his snow hut, and I could not help wishing an artist were there to paint the picture from life. I do not wish to seem conceited, but it seems to me that artists do not do justice to the birds, because they

almost always draw them in the same stilted, commonplace attitudes, and appear to forget that "variety is the spice of life"—of bird life as well as human life. I could suggest to artists a thousand pretty bird pictures that have never been drawn.

II.

You may wonder what my little winter friend, the crested titmouse, feeds on in cold and stormy weather. He has a sweet tooth, so to speak, for so many things that there is little danger of his famishing. Sometimes, like the nuthatch, he fishes out a grain of corn from some cranny in the trees, where he or some of his kin hid it in the autumn. Then he places it under his claws on a limb, and daintily nibbles at it or vigorously pounds it to pieces. If he can find an acorn, he disposes of it in the same way, tearing off the shell and eating the kernel.

There are also the dogwood berries, of which he scales off the rind and pulp, and then contrives somehow to split the pits in two and eat the small kernels within. The ground beneath the dogwood trees is often strewn with these broken shells. He will also dine on the cocoon of a caterpillar or other worm

if he can find it among the dead leaves, either on the trees or on the ground, and a great time he often has breaking open the tough shell in which the worm has encased itself. Nor does he disdain to eat weed seeds when hunger drives him to use them for diet. The kernels of hickory nuts and walnuts, if he can manage to get them, are also a favorite dish with our hungry little titmouse.

As I continued my walk farther on in the woods, I was saluted by the crested chickadee's dainty cousin, the black-capped titmouse or tomtit, a rare little beau which enlivens my neighborhood all winter, no matter how severe the weather. He and his fellows were scurrying about on the snowy ground, hunting for seeds, forgetting, it seemed, that their feet were bare and their carpet icy cold. If one only knew how one could make a pair of tiny socks for his feet, and could induce him to wear them! But I suppose he would decline them with scorn, declaring that he was no tenderfoot, and that the hose manufacturers might become bankrupt for all he cared.

The tomtits flitted about among the ice-clad twigs, twining their claws around them without fear of chilblains. Occasionally they would slip a little, but by the aid of their wings

would soon recover their balance. Yet they seemed to utter their disgust at such treacherous perches by impatient chirps. One of them flew to the bole of a dogwood sapling, and

The chickadee's winter breakfast.

clinging there almost like a nuthatch, thrust his bill into a small hole in the bark and tried to pry and pick out a toothsome morsel of some kind. He worked with so much zest that he deserved success, whether he won it or not.

The conduct of the downy woodpeckers—drum majors of the woods—was odd. They seemed to have a spite at the ice, for they clung to the slender branches and hammered away as if their life depended upon their efforts, making the icy particles fly in all directions. No; they would not be outwitted by the ice in that way and cheated of their dinner, but wherever they could see a juicy grub or bud beneath the crystal coating they would chisel their way to it with their stout beaks. Only once or twice they hammered on the boles of the trees where there was no covering of ice.

These woodpeckers are very reckless tilters and climbers, hurling themselves from tree to tree with break-neck swiftness, very often as if it mattered not where they alight. It was quite amusing to watch them dash about and attempt to catch with their claws at a slippery limb, lose their hold, and then scramble wildly for another perch.

The next morning at nine o'clock the sky cleared and the sun shone brightly. If you could have seen the woods then, clad in gleaming crystal, you would have clapped your hands with delight. The various colors that flashed from the icy knobs and prisms and

cylinders presented a picture that was simply wonderful. Looking through my opera glass at nearly a right angle with the sun's rays, I could see, flashing back from various points or facets, pure crystal, gleaming silver, sparkling gold, bright yellow, purple, pink, pale yellow, greenish yellow, crimson, and I know not how many other colors, all of them glimmering like twinkling stars. No queen ever wore so rich a display of diamonds as were worn that morning by every bush and branch.

I said in the first part of this chapter that artists do not study variety of attitude and position in making their pictures of birds as much as they should. A song sparrow sat in the midst of a clump of wild rose bushes by the side of the lane. Every gracefully curved stem was encased in its robe of ice, making the thicket look as if it were spangled with pearls and diamonds and gems. Was ever a bird surrounded with such wealth and glory? It was a scene worthy of the deftest hand that ever wielded a brush, but I fear it will remain unpainted save by my poor, scrawling pen.

My mind was somewhat divided between the birds and the beauty of the scene around me; but still I saw a nuthatch fly from one tree and try to alight on the icy side of another. Of

course he could not cling there, for his claws would not penetrate the ice, which was still very hard, and so he was forced to clamber to another perch. But what were those birds flitting about me so airily? They were the jolly juncos, or snowbirds, which, to my surprise, I had failed to see at all on the previous day. Where could they have been? Not one had been seen, while to-day I found several bevies of them in various parts of the woods, as fearless as ever of my presence. Yet another fact was not less puzzling. You may remember that yesterday I found the tomtits and downy woodpeckers here in abundance, but to-day they are nowhere to be found, look as I may. The appearances and disappearances of many species of birds are quite perplexing to the student of their habits.

A BOYS' BIRD EVENING.

SOME QUESTIONS AND ANSWERS ABOUT BIRDS AND THEIR HABITS.

One of my pleasantest evenings was spent some time ago with the boys of a local association. The superintendent, who is interested in the mental development of the members of his department, had asked me to talk to the boys on "Fly-aways"—meaning the migratory birds. Instead of delivering a formal lecture, I spoke in a familiar way, frequently interjecting a question as I proceeded with my descriptions. This method succeeded in keeping the class wide-awake; indeed, they seemed to be on the tiptoe of expectation, not knowing at what moment one of my questions would be projected into their camp.

This leads me to remark, by way of parenthesis, that the Socratic method seems to be best adapted to giving instruction to restless

boys and girls—which suggestion I throw out as a hint to lecturers in general.

The urchins before me were bright and alert. Both what they did know and what they did not know about our common birds caused me not a little surprise. One of my interrogatories was: "How many kinds of sparrows do you know?" The answers were varied and contradictory. Some said only one, meaning the English sparrow; some said two, and one plucky little fellow declared, "I've seen three different kinds, but I think there are more." The only species familiar to many members of the class was that foreigner, the English sparrow; and so there was no little surprise when I told them of the long list of charming American sparrows, which sing so beautifully, and whose manners are very different from those of the ill-bred redcoats. Their eyes fairly bulged with wonder while I called the muster roll of song sparrows, chipping sparrows, field sparrows, vesper sparrows, grasshopper sparrows, fox sparrows, white-throated and white-crowned sparrows, and others; and perhaps some of my young listeners resolved to use their eyes to better effect thereafter.

Another query proved that they had not been asleep all the time, even if they had

been caught napping on the sparrow question. "How many of you know the bluebird from the blue jay?" Quite a number of hands went up.

"Name some of the points of difference," was the next proposition. Promptly came one answer, "The jay has a crest and the bluebird hasn't." Then other responses rang out in quick succession: "The jay is much the larger bird;" "The wings and tail of the jay are spangled with white, which is not the case with the bluebird;" "The bluebird has a brick-red breast;" "Their bills are very different," etc.—all of which proved that the lads had been making distinctions whether they had been conscious of it or not.

When I asked the boys whether the small birds performed their migratory journeys in the daytime or at night, the quick response was, "In the daytime;" an error that had to be corrected. The correction created not a little surprise, and no doubt some of the urchins felt skeptical about the truth of my statement. Of course, the proofs had to be forthcoming. What were they?

1. You may often hear the chirping of the feathered voyagers overhead at night during the migrating season.

2. Migrants are often seen flying in the illumined area of a lighthouse, especially during a fog or a storm, and sometimes many of them dash against the building itself and are killed or disabled.

3. By means of a telescope birds have often been seen crossing the disk of the moon at night.

4. Birds that are not seen at all one day are often found in great abundance early the next morning.

Of the last fact I gave a concrete example by way of illustration. One spring I spent a whole day rambling about in the fields and woods within a mile of my home, and did not see a single meadow lark, nor hear a song. The next morning at peep of dawn, however, no sooner had I stepped out of my rear door than the shrill, wavering melody of at least a score of larks greeted me, darting like musical arrows across the gray fields. When had the gay pipers come? Certainly during the night.

In answer to another question a bright lad said that the migrants perform their long journey from the North to the South by stages. This was correct. A covey of birds may leave Ohio in the evening, fly all night, and halt the next morning at some favorite resort in Ken-

tucky or Tennessee, where they may remain a few days, or even a couple of weeks, feeding on seeds, berries, and insects, until a cold wave from the North warns them that the time has come to resume their pilgrimage toward the Southland.

When I interrogated the boys as to the extent of the birds' travels, they were somewhat nonplussed, but very anxious to have their curiosity gratified. So I explained that some species of migrants spend the winter in the southern part of the United States, others wander into Mexico, others to Yucatan, Central America, Costa Rica, Colombia, and even as far as Peru and Brazil. Quite a number winter on the Bahama Islands, the Florida Keys, and the West Indies. If we could only follow them in their travels, and study their interesting conduct in all places and in every season! Among our most "traveled" birds are the curlews, two species of which, the Hudsonian and Eskimo, breed in summer in the Arctic regions, and often range in winter as far south as Patagonia. What globe flyers they are! Even our common little spotted sandpiper sometimes goes on a winter jaunt to Brazil, where, not to make a paradox, he finds perpetual summer.

At the World's Fair I visited the Costa Rica

building, and found there an excellent collection of mounted birds. A scientific young Costa Rican, who was in some way connected with a national museum and whom I found to be very scholarly, told me some interesting facts about the avian life of his native country. The collection contained many of the members of our own *avi-fauna.*

"These birds," he said, in reply to my question, "are winter residents in my country. When spring comes they leave us, and fly across the gulf to this land."

"How do they spend their time in your country?" I inquired.

"Oh, they flit about in the woods and fields, feeding and chirping," he replied, with a smile. "No, they do not sing—or at least they sing very little—nor do they breed. Our native birds, however, sing and breed in the proper seasons."

Among our northern species that make Costa Rica their winter quarters I noted the cardinal grossbeak, the scarlet tanager, the cedar waxwing, the Baltimore oriole, and the robin.

Having talked to the boys awhile and plied them with numerous questions, I in turn gave them a chance to catechize me, little think-

ing that their minds were literally teaming with interrogation points. I had my hands full, I assure you, answering all their sharp inquiries. Get a boy started, and he can ask more questions than the astutest ornithologist can answer, let alone one who makes no pretensions to great wisdom. One of the first questions was, "Why do the migrants fly at night?"

"A very pertinent question," I replied. "Let us see whether you yourselves can not think of some of the reasons. Put on your study caps."

Up went several hands, and the following were the answers elicited: The heat is not so intense at night; there is not so much danger from hawks and gunners; by traveling at night the birds can feed during the day; there is no temptation to loiter by the way when they can not see the country below them.

"Do all birds perform their migratory journeys at night?" was the substance of one boy's question. "No," was the reply. "The water birds fly during the day as well. You have often seen a flock of wild geese or ducks overhead."

"How far north do the birds go for the summer?"

Some species go very far. Even some of our tiny warblers are found in Greenland. Many birds rear their young during the brief summer within the limits of the Arctic circle. Travelers who have penetrated farthest to the North report that flocks of wild geese are still seen pressing their lonely flight toward the pole. Whether they really find an open polar sea is only a matter of speculation and surmise.

Another sharp questioner led me to explain the "gathering of the clans" preparatory to migration. One fair April day I was rambling along on an old canal that cuts its way through an extensive marsh south of the Mississippi River, opposite the city of New Orleans, when a promiscuous chattering reached my ear. Pressing my way through the tangle of bushes and weeds, I soon discovered a large company of red-winged blackbirds perched in a clump of small trees, evidently holding a session of senate to discuss their prospective journey to their Northern summer habitat. It was precisely like the councils they hold in the North in autumn a little before taking the air line route for the South. In northern Alabama, a few weeks later, a flock of male bobolinks were assembled in a noisy synod, obviously for the same purpose.

One of the boys of my bird class wanted to know whether all the birds go South in winter. At once a number of hands were raised, and some one replied in the negative; at least the English sparrows do not leave. Expanding a little on the subject, I explained that the habits of the various species were dissimilar. Some species push far to the North in summer and far to the South in winter, and never make our central latitudes their dwelling place. Others are summer residents, others winter residents, and others all-the-year-round residents in our Central States. Let us take some concrete cases. The brown thrasher comes from the South in the spring and re. turns to the South in the autumn; the hermit thrush is only a migrant, going northward to breed and southward to spend the winter; the tufted titmouse remains summer and winter; while the tree sparrow comes from the North in autumn and hies back to the North on the arrival of spring. There are also species that never come so far south as the latitude of southwestern Ohio, and many species that never come so far north. Of the former we might mention the Canada jay, the great northern shrike, the Bohemian waxwing, and the spruce hen; of the latter, the summer tanager,

the boat-tailed grackle, the brown-headed nuthatch, and the red-cockaded woodpecker.

My boys became so interested that I could scarcely bring our colloquy to a close. We must have spent an hour and a half together. They asked some rather puzzling questions, as, for example: How long do birds live? Why don't the migrants breed in the South? What causes them to press north in the spring? How do they find their way and keep the right direction in their nocturnal flights? To these I made answer as best I could.

BIRDS AND BATTLEFIELDS.

I.

If Chattanooga, Tenn., and its environments are rich in reminders of military conquest, they are also rich in lore of a more irenic nature, especially the kind for which the bird lover is ever on the alert. You will no longer hear the stirring music of fife and drum leading brave boys in blue and gray into the fierce onset; but you will hear the reveille of the Carolina wren and the clear bugle of the Baltimore oriole on almost every historic field. An enthusiast can not help wondering what the birds were doing on those autumn days when the armies met, and the crack and boom of artillery rent the air, and the groans of the wounded and dying filled in every lull of the strife. What did the birds think of such butchery on the part of the liege lords of creation? Did they question man's right to be in the van of the animal kingdom? One might even wonder whether the birds now singing so cheerfully

on these battlefields preserve any traditions of that era of war.

But enough of speculation. Let us come to actual observations. My headquarters were at a quiet hotel on Missionary Ridge, an almost idyllic place for rest and natural history study and pastime. In this region the mocking birds are not abundant, only one pair having been seen, while a third songster was heard at a distance. On the first morning, at the peep of dawn, my half-wakeful slumbers were broken by the loud mimicry of a mocker, which, with his mate, annually takes up summer residence on the hillside below the hotel. A wonderful minstrel he proved to be, more limber-tongued and versatile, it seemed to me, than the mockers I heard, two years prior, along the Gulf coast in southern Mississippi. There one might listen to eight or ten mockers singing simultaneously, while here my jolly vocalist had the field all to himself for exercise in imitative gymnastics. This fact may account for his apparent superiority over southern rivals. It is possible, too, that those birds which are more hardy and therefore more strong throated, migrate farther north with the advent of spring.

Be that as it may, this mocker is worthy

Birds and battlefields.

of more than a mere casual notice. He was an aviary in himself. His vocal performances deserve analysis, for they were little short of marvelous. His throat seemed to be a living phonograph. Again and again I bent my ear on his song, and am disposed to announce that almost, perhaps quite, every note he struck was an imitation of one of his fellow-minstrels in feathers. None of his music seemed to be original. A wholesale plagiarist he, boldly proclaiming his theft to all the world. Mockers in cages are apt to imitate various other sounds, such as the tones of a piano, a dinner horn, or a tooting locomotive, and I have been told of one that would whistle the tune of Home, Sweet Home; but the minstrel of Missionary Ridge, in the free out of doors, confined his mimicry solely to the songs and calls of other birds, disdaining, it would appear, to borrow from the human world.

As a copyist of his fellow-lyrists he was an adept. His superior I have never heard. The skill with which he wove together the various songs of the birds of the neighborhood and made them homogeneous was as wonderful as it was amusing. The strains of the Carolina wren seemed to be his special favorites. Many a time in quick succession he would roll from

his limber tongue four different songs and two and even three alarm-calls of the wren, getting in all the details with the utmost precision. It was evident that he had studied these wren lays, and had practiced them until he had attained perfection. Indeed, an expert ornithologist would have been completely led astray by the imitation. More than once I was sure that I was listening to a wren's rolling notes, and was only disabused of the error by the succeeding strains, which proclaimed the provoking mimic. The mocker's imitation of the various wren songs and calls in quick succession is all the more curious because the wren himself seldom delivers his music in that way, his habit being to deliver one song for awhile, and then take up another.

Our jolly mocker had quite an extensive répertoire. It was pleasing to hear him repeat the phœbe's whistle several times, and then close with that of the wood pewee, an order that he seldom failed to observe, and never reversed. Perhaps he mistook both songs for the production of one bird. He took special delight in delivering the loud, martial call of the tufted titmouse, and also that bird's saucy chick-a-da-da, giving all the variations. One is almost tempted to say that he could whistle the cardinal gross-

beak's tune more naturally than Master Grossbeak could do it himself. The peculiar throaty, semi-guttural tones of the cardinal were reproduced with scientific precision. Nothing could have been more realistic than the mocker's delivery of the flicker's long-drawn spring challenge, ending in a quaver of affectionate assurance to his mate. Few songs are more complicated than that of the purple martin, but in this case the mocker was, as usual, equal to the emergency, putting in all the curves and wrinkles and guttural warblings.

Besides, our vocal gymnast mimicked the peculiar calls of the red-headed woodpecker, the "mew" of the catbird, the labial "zip" of the brown thrasher, the alarm calls of the wood thrush and the robin, the robin's "cheerily, cheerily," the catbird's medley, and the "bob-white" of the partridge. A slight explanation is necessary in connection with the last-named bird's call. The mocker never produced the first syllable, "bob," but only the second, "white," just as if he had heard the call at a distance, and had not caught the first part. Why he should omit that, and yet imitate the second syllable with perfect accuracy, is an unsolved avian problem. No doubt it was puzzling to "Bob" himself.

Another question to which I could not find a satisfactory reply was this: When did the mocker take his meals? He began to sing before break of day, and his was the last voice heard in the gloaming, and all the intervening hours were musically employed. Even at night his voice often rang out in the darkness and partially waked me. Sometimes, however, he would leap straight up into the air and almost turn a somersault, never pausing in his song. Perhaps he caught an insect on the fly at such times, and thus got something for his maw. In flying from one perch to another he would connect the two with a festoon of song. Once he repeated two songs and one alarm call of the Carolina wren while making a rather lengthy aërial journey from the ridge of a roof to a telegraph pole.

One more eccentricity of this feathered genius must be noted. It was unaccountable that he never imitated the songs of some very conspicuous feathered lyrists of the place. Among them were the wood thrush, the indigo bird, the chipping and bush sparrows, the summer tanager, the brown thrasher, and the yellow-breasted chat. How much I wished he would try his vocal gifts on some of these birds' songs! If one could only have

suggested to him to enlarge his musical sphere! It was certainly curious that he gave the calls of the wood thrush and the brown thrasher, but never reproduced their songs.

There is danger that all other feathered songsters will suffer in comparison with the mocker's splendid efforts. He seems so superior to all his rivals. A catbird's song on the same hillside seemed very tame, almost insipid. And yet in a wooded hollow, out of hearing of the jolly mimic, a catbird executed some exquisite runs that for sweetness and flow were superior to any tones produced by the hillside minstrel. They had a deliciously human intonation, as if the bird were uttering a sentiment; and no doubt he was, for he would return to them again and again. The technique of the song was excellent It was with no little pleasure that I said to myself: "It is enchanting music, and all original, too!" With all his sly ways, the catbird is too honest to pirate another bird's song, although in Virginia I once heard one give a perfect imitation of the whip-poor-will's nocturnal lay. Perhaps it was only fancy, but it appeared to me that the catbirds sang more sweetly in this battle-renowned region than elsewhere.

In a few hours' ramble over a neighbor-

ing height I found the charming little prairie warbler, with his bright yellow robe and black stripes on his sides and cheeks. He is a dainty birdlet, and his trill is a slender line of quivering sunshine swinging to and fro like a tiny pendulum. Sometimes he repeats a straight trill, slightly ascending in the scale; at other times his song is divided into two or three syllables. There is a peculiar intoning about his trills that distinguishes them from other warblers' rondeaus. There are times when they resemble somewhat the trill of the chippie, though they have a more musical quality. No warblers, save the yellow-breasted chats, were so abundant among the mountains of Tennessee, and yet they are called prairie warblers. I have never seen them anywhere except in mountainous districts, which shows that even in the bird world names are sometimes misnomers.

One of the quaintest birds found here was the white-eyed vireo, his saucy outbursts sounding so much like a challenge to combat. No syllables can represent these songs, if songs they can be called. They seem to be a disjointed succession of notes delivered with so much labored effort that it threatens to tear the minstrel's larynx to shreds. One seen on the bushy side of a hill sang one

tune awhile, then another, and did not allow me to leave the place until he had shown me that he could sing at least four tunes.

Part of his strain is a kind of gurgle, as if he might have just taken a drink of something a little more potent than water. As a rule, he closes each run with an emphatic note cut off short, often with the rising inflection. His little white eyeballs are not for nothing. They are bristling with interrogation and exclamation points. There are times when, hidden in a bush, the white-eye will engage in a wild chattering, tumbling his notes over one another in such odd chaos that you feel sure there must be several birds engaged in a *mêlée*. This performance is a genuine bird racket.

What a haunting song is that of Bachman's sparrow! He is peculiar to the South. On Chickamauga battlefield, now a national park, one of these birds was singing in an almost magical way, with a touch of sadness in his tones, as if he were rehearsing an elegy for the heroes slain over thirty years ago. No doubt his forbears sang the same tunes in the same place during the trying times of the "cold and cruel war." On the hillsides sloping down from General Bragg's tower on Missionary Ridge, the Bachman sparrows were lavish of song. They

Bachman's sparrow.

allowed me to approach them closely, and as I sat in the shadow of a small tree, one of them poured forth his quivering, swinging lays—a sort of votive incense to old memories. In a country where the song sparrow, so abundant and tuneful in the North, is not seen or heard—at least not in the spring—it is well to have his place supplied by this plainly clad but silvery voiced little triller.

II.

A few hours were spent in the National Cemetery, where thirteen thousand soldiers lie buried. It is a beautiful place, with its green, closely mown lawns, white headstones on the slopes, and many shade trees. A list of all the birds I found in this "city of the dead" may be of some interest: Orchard orioles, Baltimore orioles, summer warblers, red-eyed vireos, wood pewees, purple grackles, warbling vireos, chipping sparrows, English sparrows (those samples of ubiquity), brown thrashers, redstarts, Maryland yellowthroats, creeping warblers, cardinal grossbeaks, cuckoos, and blue-gray gnatcatchers. It was the 9th of May when these species were seen. No doubt many more, the year round, find this burial spot a safe retreat from their foes, for here no shooting of any kind would

be allowed, although the place is a memorial of the destructive effects of powder and lead some thirty odd years ago.

There are still some battles—or, perhaps, they should be called only scrimmages—fought in this peaceful place. Two male orchard orioles were trying to settle a little unpleasantness by resort to arms—or, to be more exact, to bills and claws. They were a matured specimen in his wedding dress of black and red, and a year-old youngster still in his swain's suit of black and yellow. The old bird flew down upon the grass and sang his rollicksome tune, and then flew up, meaning to find a perch in the tree; but unexpectedly on his way he encountered his valiant young rival. The combatants closed in the air, and struggled and squeaked as they dropped to the ground, where for a quarter of a minute or more they engaged in a set-to worthy of 1863, pecking and clawing, and mixing themselves up in a kaleidoscopic medley of colors.

When they parted and flitted up into the trees, it was the youngster who was in pursuit of the other. A demure maiden, the cause of the contest, was moving mutely about in the foliage, acting utterly unconcerned as to the issue of the battle. I call it a battle to give my sketch a deeper tinge of local coloring.

Here during the war one of the severest engagements took place, and now my orioles were keeping up their mimic contests.

Time was, the superintendent told me, when the air of the place was vocal with the songs of mocking birds; but within the last few years they have disappeared entirely, evidently driven away by the English sparrows. "I wouldn't give one mocker for five hundred pesky sparrows," he declared with indignant emphasis. An idyllic place it would be for mockers, if they could possess it in peace, but they are like most musicians—too highly organized and too sensitive to brook a rival who drowns out their melodious mimicry with his clamor.

Among the most martial strains in this military atmosphere were the bugle calls of the Carolina wren. Still, I fancy that his notes were more like those of Roderick Dhu calling his Highland clans to arms than like an American bugle call, and they certainly bore no resemblance to the martial music of fife and drum. The wrens, even so early as the 8th and 9th of May, were feeding their young, which were in some cases perfectly fledged. Still more abundant were the rollicksome chats, which were just beginning to build their nests. On every bushy mountain-

side their quaint, challenging calls were heard, and often they flew high in air and then descended by a stairway of flight, their bodies swinging loosely, as if suspended on their upraised wings, while they shrieked all sorts of menaces at an intruder.

One afternoon a couple of lads and myself clambered down the steep, rocky side of Lookout Mountain. That was more sport than going down by the prosaic incline, which was the stereotyped route. We began our descent through a gorge that runs down steeply between Sunset and Snake Rocks, and thus we got a view of those terrific precipices from below instead of only from above, as most people do—people of the mediocre type, you see! A blood-red summer tanager tilting over the rocks is a thrilling, almost a blood-curdling sight, making one glad that Nature has made the bird a natural flying machine.

On the summit of the mountain the birds were not plentiful. A few chippies, red-eyed vireos, and summer tanagers formed the complement. May I venture to guess the reason of this scarcity? Perhaps the want of water on the heights will partly explain it, as no small amount of effort would be required even for a bird to make the journey down the mountain,

and especially up again, for drinking and bathing purposes. Having no elevators, they find it too irksome and inconvenient to live on the upper story of a mountain flat. At all events, there were many more feathered folk in the valley than on the mountain.

In the neighborhood of the famous "battle in the clouds," where General Hooker made his gallant charge, I had an agreeable surprise. Glancing up into the foliage of a tall tree, my eye caught the glint of a patch of brilliant red among the leaves. What could it be? I was puzzled for a moment. It really looked like a blood-stain, and for a moment the place seemed a little uncanny. But my opera glass soon told me that the gleaming spot was the carmine shield worn by the rose-breasted grossbeak, of which I had accidentally caught sight through an aperture of the leaves. Presently this brilliant bird's mate appeared on the scene, and together they swung gracefully down the acclivity. I warrant you that no officer of the army in 1863 was more gorgeously accoutered than that grossbeak. This was the 8th of May, and these feathered travelers were *en route* for their summer home in the North.

Along the foot of the mountain, on the bushy steeps and the thicket-fringed banks of

the Tennessee River, there was a-plenty of singing and chirping. Here were the yellow-breasted chats, the summer warblers, the cat-birds, the Maryland yellowthroats, the indigo birds, the cardinal grossbeaks, the white-eyed and red-eyed viroes, the chippies, and some others. In the tanglewood that bordered a small stream there was a deluge of bird music pouring mostly from the throat of catbirds and cardinals, who were bringing the day to a fitting close with their jubilant vespers.

A Bachman's sparrow acted oddly over on another slope. It sprang up from the ground, and flitted among some blackberry bushes, and then darted across a road and sat on the ground, uttering a nervous sound, which seemed like chirping and singing combined. Breathlessly I sought for a nest, for that is the manner of many birds when they are disturbed in their breeding; but no nest could be found. It was queer that a bird should behave itself in that way when there was no cause. Presently two sparrows were seen, doubtless a male and a female, and in a few minutes one of them sat on a perch and sang most exquisitely.

Yet their conduct was no more enigmatical than that of a pair of creeping warblers in the woods near by. The little dame was sitting in

a leafy tree preening her feathers, while the male barely gave me a glimpse of himself before he scuttled away. For a long time I watched her arranging her toilet, and there seemed to be every evidence that she had come from a nest. Suddenly she flitted to another twig, rearranged a feather daintily, and then darted down into a small thicket of blackberry bushes. A nest, I felt sure. After waiting a while to let her get settled on the supposed nest, I cautiously crept near. She flew down on the dead leaves, where she held herself sidewise, her feathers fluffed up, her wings outspread and drooping, and her head canted oddly to one side, as if she were looking down at something of intense interest to herself.

Slipping away again, I waited for a quarter of an hour, and then returned to the thicket, moving slowly and quietly. As I bent over the bushes, I heard the bird flutter up from the leaves, and fly chirping away. Sure of a nest, I sought for one among the leaves for a long time, but in vain. When I returned to the place some three hours later, no bird and no nest were to be seen. It struck me that the creepers and sparrows just described had gone into a conspiracy to mystify me.

Much more satisfactory was my quest on a

steep hillside a little later. A bush sparrow flew up from the ground, chirping uneasily, and there, snugly set in the bushes, was her pretty nest containing four bantlings over half grown. A catbird's domicile farther up the hill contained only one egg.

Brown thrashers were not plentiful about Chattanooga, perhaps not more than a half dozen having been seen in my strolls; nor were these especially musical. Near the hotel where the mocker had domiciled himself a thrasher occasionally made a half-hearted attempt to sing, but apparently the superior performances of his rival disconcerted him, and he seemed to give up in disgust.

Not a song sparrow was seen or heard in all this region. About my home in Ohio every piece of low ground has its quota of song sparrows, often trilling every month in the year. It was an unusual experience to follow the winding hollows and crystal streams in Tennessee without being greeted by a trill from the throats of these merry songsters. Yet I have no doubt that these birds pass through here in the migrating season both in the spring and the autumn; for, one day in November, I found several of them near Montgomery, Alabama. And they were singing,

too, to be sure! Otherwise they would not have been true to song-sparrow temperament.

Tennessee, however, has Bachman's sparrow, trilling his sweetly sad refrains on every hillside, and that makes partial compensation for its lack of our Northern lyrist. While I should not be willing to exchange the song sparrow for Bachman's, no doubt there are persons who would pass verdict in favor of the latter bird as the superior triller. The wood thrushes—they could tell you many a sylvan secret—were quite abundant, their sweet, pensive melody falling from the steep mountain sides like the tinkle of half-muffled bells. The orchard orioles were oftener seen than their Baltimore cousins, but wherever the

Oriole and nest.

latter were, they failed not to make their presence known by their cheerful piping.

One evening I was greatly puzzled by the strange calling—it was half whistle, half call—of a bird down the slope from Bragg's tower. Never had I heard a bird call like that. Expecting to find some rare species, I approached the jolly piper on tiptoe, so to speak, when, lo! it turned out to be only a Baltimore oriole, one of my best-known birds. I am aware that Master Oriole is a vocal trickster, but I never expected an old friend to lead me so completely astray.

SOME CURIOUS NESTS.

Nature has performed some odd freaks in the way of architecture, and it has seemed to me that a description of some of the most curious bird nurseries in various parts of the world would be interesting to my readers.

In this country we have a little ovenbird, which makes a grassy ball on the ground among the leaves or weeds, with a small hole at the side for a door. But in South America there is an ovenbird which has a still clearer title to the name, for it makes an oven of clay, and places it on trees or window sills, so that the under side is flat, while the upper part is round like a mound. At one side there is a small doorway, like the entrance to an Eskimo hut; and, still stranger than all, the interior is divided by a partition into two rooms, in one of which the female lays her eggs and rears her young. In building the nest the birds bring their material in little mud balls, which they work into the walls. They are quite

tame, often coming near human residences to build their nests. They work rapidly, sometimes beginning and completing their nests in two days.

Another fine architect among birds is the fairy martin—also a worker in clay like the bird just named. It kneads its mortar through its bill, mixing it with its own saliva so as to give it a soft and sticky character. This kneading is done before the clay is carried to the nest. It is said that six or seven birds will work at one time at a single nest without getting into a jangle, one of them remaining at the nest as builder while the rest act as hodcarriers, bringing the building material as fast as she needs it. When the weather is dry they work at their nests only in the morning and evening, because during the remainder of the day the sun is so hot that it dries the mortar too rapidly to be kneaded with ease. The outside of the nest is quite rough, but the interior is very smooth, lined with feathers and fine grass. It is made in the shape of a flask, the larger end being fastened to a wall while the body of it extends outward, and is often bent slightly downward, the opening being at the smaller end.

There is a rare little bird in far-off Austra-

lia, called the dicæum, which is a deft weaver. It makes a purselike nest, which is suspended from branches and twigs, around which the supporting fibers are wound. The entrance to this dangling little homestead is at the side, from which you can see the dainty sitting bird's head projecting. The nest looks as if it were made of white cotton cloth, but is really composed of soft, cottony down gathered from the seed vessels of certain plants.

No birds build more dainty and beautiful nests than the various species of humming birds. The male carries the material to the site, and the female does the constructing. Lichens are mostly used, and are skillfully braided together, the spaces between the parts being filled with the bird's saliva, which is of viscid quality. The inside is padded with the silky fibers of certain kinds of plants. The sites selected are often quite wonderful; sometimes the nest is suspended on a leaf, or on the side of a slender branch; sometimes it is placed on the upper side of a horizontal bough; then it may be hung on a bundle of rushes, or fastened to the thatched roof of a settler's cottage.

You have often heard of that skillful little nest maker, the tailor bird. Well does it de-

serve its name. Perhaps you have seen pictures of its nest. It will select two broad leaves not far apart, and stitch the edges together with a thread which it has spun of cotton. The stitching is done with its bill used as a needle. The leaves thus bound together form a sort of pocket into which the little tailor throws some soft, downy material, slightly hollowed at the top for a nest. Sometimes only one leaf is used, if it is large enough, the two edges being brought together and stitched.

The English blackbird and lapwing, after building a nest of grasses and fibers, surround it with a kind of cement which holds the walls firm. There are some birds which scratch together a heap of leaves, making a sort of hotbed, on which they lay their eggs, and let them hatch by the heat produced by the decaying substances. Some of the grebes and rails drag from the sides and bottoms of streams fragments of water plants of which they form a rude, half-floating mass piled on the water-weeds. On this they sit, the eggs being hatched partly by the heat of their bodies and partly by the heat generated by their queerly constructed nest.

The magpie is a thief, and, like all rascally

Edible birds' nests.

folk, seems to suspect that other animals and birds may be thieves as well; so she surrounds her nest with a hedge of thorns. Whether she ever pricks herself on them or not, I am unable to say. While the little sand martin lines her underground nest with the softest feathers she can find, the rude kingfisher forms a couch in her cellar in the bank of spiny fish-bones,

which she ejects in pellets from her own stomach.

There are "edible birds' nests"—that is, nests that are good for food. The Chinese relish them. They are the nests of a certain species of swift, which makes them of a peculiar secretion of the salivary glands; this hardens rapidly when exposed to the air, becoming like isinglass, and is one of the delights of John Chinaman.

There are humming birds and tiny grossbeaks which suspend their nests by a single thread. But suppose the weight of the growing youngsters within should destroy the balance of the nest and tip it to one side, what is the old bird to do? Let them dash themselves to death on the ground? Oh, no! She only puts some lumps of earth on the other side to restore the equipoise. This would be almost beyond belief if it were not vouched for by credible writers on birds and their quaint habits.

THE AMERICAN QUAIL.

While you are young and live in the country where you can hear the blithe whistle of the bobwhite and his sweet, tender love call, you do not need to wish yourself a grown person. They are among the most charming sounds of our rural districts, and after you have come to middle life or old age, every time you have a chance to listen to them, you will wish yourself a light-hearted boy or girl again, skipping over the green hills and meadows. I think if I had my life to live over, I should never again become discontented as long as I could hear those rural sounds.

More than once, as we sat around the dinner table in our old country home, we would suddenly hear a merry, challenging whistle from out of doors, and for a moment would look at one another doubtfully, thinking that some one was whistling a signal to us; then we would burst into a hearty laugh, for the next thought told us that it was only the human-

like whistling of the bobwhite to his mates in the clover field beyond the lane. I say of the quail what Lowell has said of the dandelion:

> My childhood's earliest thoughts are linked with thee.

The habits of the quails are well known to most people who live in the country, for these birds often start up in small bevies from the grass and in the woods. At such times the first intimation you usually have of their presence is the loud whir of their wings as they start from the ground and dart away with a swiftness that the eye can scarcely follow. It is mostly in the fall and winter that they move about in flocks, feeding on such seeds as they can find on the ground; and then when spring comes they divide into couples and begin to make their nests and rear their young.

I have found their nests in wheat fields, in roughly kept new grounds, among the briers in old, neglected pastures, in the deep grass along a rail fence, and beneath a pile of rails at the border of the woods. Some writers say that the nest is quite neatly roofed over, having an entrance at the side, somewhat like the nest of the oven bird, and I do not dispute their testimony. But I have never found such a nest, and will say that the description corresponds

better to that of the nest of the meadow lark than to that of the quail, so far as my observation goes. All the nests I have found have been grassy baskets sunk into a shallow hollow of the ground and completely open at the top.

As many as twenty eggs are sometimes found in a nest, though a dozen is more likely to be the quota. Such a nest, its bottom lined with pearly treasures, is a beautiful sight, worthy of the brush of the artist. If the eggs can be found fresh, they are excellent for food—at least, such is the opinion of those who have the conscience to rob the nest of the quail.

Like the grouse and some other birds, the young quails are ready to leave the nest almost as soon as they are out of the shell, being very active and shy. Indeed, I have heard old harvesters say that they have seen them scuttling through the wheat stubbles with a part of their shell still clinging to their backs. Sometimes in my rambles I stumble upon a brood of little ones with their mamma. How the old bird calls and rushes about and trails and fluffs her feathers until she has warned her little ones of their danger! And how they scud about and creep into the grass and bushes, sitting so close that it is next to impossible to find them! Only

"Bobwhite."

a quick glimpse of the little birds is enough to convince you that they are as pretty and innocent as baby birds can be.

No wonder the quails are so wary. Full well do they know how fatal is the sportsman's gun with its charge of scattering shot that makes escape almost impossible. So many of their companions have been killed in this way that those which remain have learned to distrust mankind, and so they seek the most out-of-the-way nooks, and conceal themselves at the first approach of a human being. Poor things! they must be constantly on their guard, and I do not see how their lives can be happy when they must always be in dread of the gunner's fatal lead.

Audubon describes a most interesting habit of these birds. He says they often roost on the ground in the grass or beneath a bent log, and this is the way they go to bed: They arrange themselves in a circle, with their heads extending outward, and then they move backward, making the circle smaller, until their bodies almost touch, when they settle down and are ready for a jaunt into dreamland. But why do they choose such a position? Because, if danger should approach, each bird can start up on the wing without colliding with his neighbors, and dash away in his own direc-

tion. There is so much calculation in this habit that it is difficult to believe that the birds are not endowed with a fair degree of reason.

However, if the quails are treated with kindness and given to understand that you will not harm them, they will become quite tame and familiar, coming even to the farmyard to feed with the domestic fowls. In such cases their ways are winsome, showing what charming birds they are. A straw stack is quite a favorite resort for them in winter, where they can be seen eating the grains of wheat with relish.

The eggs may be hatched with those of the bantam, both requiring three weeks for incubation, and in this way quails may be reared, becoming the most delightful pets. If treated well, they become almost as tame as the fowls about the house, only, of course, their powers of flight make it necessary to keep them in a coop or cage to prevent their straying away. A writer says that he has often caught quails with a lath trap in winter, and in a few hours they became so tame that they would freely eat corn and wheat dropped down to them between the slats, and if he kept them a week and then gave them their freedom, instead of flying away never to return, they were after-

ward seen daily feeding with the hens and cattle in the barnyard.

While the eggs are being laid the female will completely cover them with leaves to conceal them in her absence. If the leaves are disturbed by a man or animal while she is away, she will instantly discover the intrusion, and abandon the nest even if not a single egg has been broken or removed. She seems to discover this by the sense of smell; for one bird student removed the leaves from a nest several times with a pair of forceps without touching them with his fingers, and then put them back carefully, but the bird did not desert the nest. You see, the wind might have disturbed those sheltering leaves, and as long as she was not advised of the presence of a man by her sense of smell she did not detect anything amiss.

There are other species of partridges in this country. The fact is, they comprise a very interesting family. There is the mountain partridge, which dwells on the Pacific coast from San Francisco to Washington. Its head is adorned with two arrow-shaped plumes three or four inches in length, and these can be noticed in the form of a little tuft of down as soon as the chick comes from the shell. It

is a very handsome bird, and breeds in the higher mountain ranges.

An author says of the renowned California quail that it sometimes builds its nest in gardens not more than twenty feet from the doorway, and also that he found some eggs of this bird in a hen's nest in the barnyard. Another writer says that he has found several of these quails' nests in trees, on the end of a broken or decayed limb, or at the intersection of two large branches. A brood was hatched in a vine-covered trellis at the front door of a school building. A resident of California found a towhee's nest which contained four of its own eggs and two of the California quail's. This must be a rather whimsical bird.

A very handsome partridge is the scaled or blue quail, which is found in northwestern Mexico, western Texas, New Mexico, and Arizona. It often chooses the most barren places for residence, many miles from water, so that it must be a kind of Arab among birds. It places its nest in a slight depression under a bush, and lines it with a few coarse grass fibers. It is said that the shells of the eggs are very thick.

There are also the Arizona quail and the "fool quail" or "fool hen" of the same State,

which range the mountains and dry mesas of the West, sometimes going as high as fifty-seven hundred feet up the mountain slopes to build their nests. What a wild, wandering life they must lead in those desolate regions, making companions for the pioneer settlers to afford relief to them in their isolation!

A MERRY PIPER.

SOMETIMES it is unfortunate for a bird to have brightly colored plumes. They make him a desirable pet, and so he is pursued by nest hunters and trappers, and often put into a cage for life. This is the case with our pretty and rollicking redbird, the cardinal grossbeak, whose loud whistle may be heard almost any day coming from the copse or the woods.

He is so happy out of doors, so full of winsome ways, and he pipes so gayly, it seems strange that any one can have the heart to deprive him of his liberty. How his red bosom must flutter with longing as he looks out from his wire prison at the bushy hillsides smiling in the sun, where he might flit about with freedom and delight!

Perhaps you would care to know where the cardinal bird, as he is often called, finds a home. I will tell you where I have found him. Here in southwestern Ohio there is scarcely a woods,

or a copse on the hillside or in the vale, which does not have as presiding geniuses one or more pairs of these birds. In the bushy woods in which I have so often sauntered they may be found both in summer and winter. Down by the river and along the bush-fringed banks of the meandering runways they love to dwell, building nests in the tanglewoods and piping in concert with the song sparrows that hop and trill hard by the water's edge.

In the northeastern part of the State I also met the cardinals making themselves at home on the steep, wooded hillsides. On a spring day, some years ago, I was tramping along one of these rocky acclivities listening to what might have been called a "responsive exercise," in which several cardinals on the hillside and one in a cage in the village nestling below, were the performers. It seemed to me that there was a sadness, an intense yearning, in the tones of the piping prisoner, while a peculiar gayety rang in the rolling, resonant songs of the free birds. Was this only fancy?

During some rambles which I took along the Ohio River on the Kentucky side several years ago, I found the cardinals very abundant and very tuneful, the high hills covered with bushes and brambles, making almost a paradise

for them. Sometimes a dozen of them could be heard whistling their gay love songs at the same time. The little Kentucky warbler sang in much the same strain, only with less vigor and variety.

The grossbeaks were plentiful in the South during my visit there in the spring of 1894. True, there were no bushy hillsides in that region, but in the quivering swamps, covered with thickly matted bushes, these birds held their song carnivals, and flitted about amid the foliage like living studies in red. It may have been mere fancy, but it seemed to me that I never saw cardinals so brilliant of plumage as were the cardinals of the Louisiana swamps.

The spring of 1897 found me pursuing my busy avocation in southern Mississippi, rambling along the Gulf coast intent on the study of avian folk. On the 27th of April a cardinal's nest containing three callow bantlings was found, and the next day another with three eggs. These nests were carefully concealed in the densest part of a green copse. Thus it will be seen that the cardinals breed in the South as well as in the North. It would be interesting to know whether a pair ever raise a family on the Gulf coast in the early spring, and then find some more northern summer home in which

Cardinal grossbeak.

to rear another brood. Perhaps some enterprising bird student will some day be able to settle that point, and thus add something new to our knowledge of birds.

Thus it will be seen that the cardinals are quite widely distributed. They are also to be found in Florida, for a friend told me of their presence there, and, besides, Bradford Torrey in his pleasant book, A Florida Sketchbook,

speaks of observing them in that State. It is rather odd that some individuals should live in the South all the year round, while others remain both summer and winter in the North, and others still migrate from one latitude to another, according to the season. You can not explain what it is that causes this difference, nor can any one; it is simply the natural disposition of some to remain at one place and of others to travel and "see the world." We find the same difference in people, some of whom are proverbial "globe trotters," while others are genuine "home bodies" by natural preference.

Not seldom does the cardinal whistle his tunes in the winter, especially on warm, sunshiny days. On the 18th of March I heard one's lilting whistle in the cemetery, and it was as gay as if the songster were in the land of the living instead of in "the city of the dead." It is hard for this gay minstrel to be sedate. There is nothing doleful about his manners or his music.

The grossbeaks make their nests in bushes, sometimes in the very depths of the woods and often in the copses. Sometimes little effort is made to conceal them. One of the most surprising of my discoveries was the following:

One spring a pair of catbirds made a nest in some bushes at the border of the woods, and reared their brood, and then left the little grassy cot, which soon became a good deal shattered. That summer—or the next, I can not recall which—I was greatly surprised to find that a female cardinal bird had repaired the old nest, straightening up the walls and adding new material, and was sitting on several eggs, from which she raised a family.

You must not suppose that the madam is so brilliantly colored as her lord. Her color is a grayish brown, with here and there a dash of red. Thus she does not make so plain a mark for the gunner, nor is she so easily seen by her enemies as she sits on her nest, proving the well-known theory of "protective coloration."

THE CAROLINA WREN.

HIS UBIQUITY—VARIETY OF HIS SONG—SOME TRYSTING PLACES.

WHY the jolly bird of which I wish to give a sketch should be called the Carolina wren is rather an enigma. Perhaps the naturalist who christened him first found him in one of the States for which he has been named. If so, it is difficult to decide which has received the greater compliment—the State or the bird. One thing is certain, the wren is not so provincial as his name would seem to imply. True, he can not be called a cosmopolite; yet he has a wide range, and, considered as a species, must be quite a traveled personage.

This wren is a bantam little fellow with a rusty brown back, somewhat striped, his lower parts white or tawny buff, and wings and tail narrowly barred with dusk. As you look at him, observe, too, that his somewhat long bill is slightly curved, and that a distinct white or buffy line extends back over his keen little eye.

You may fancy, on first acquaintance, that he is an exact counterpart of some of his relatives; but by and by you will learn to know him at a glance by his peculiar pose and form. Like most of his wren congeners, he is in the habit, when excited, of squatting—or "juking"—his little body in a comical way.

Nature, it must be conceded, has made some quaint paradoxes. One can not help going about in her domain with one's mind bent in the form of an interrogation point. Why, for instance, has she dowered the Carolina wren with such versatile vocal resources, and yet put no real melody into his throat? Of the dozen or more tunes—if you can call them such—which he is capable of piping, not one of them can really be called melodious. Be it said, however, that they are not displeasing. Some of them ring like a bugle call; all of them are suggestive of breeze and stir and untiring activity. There is nothing pathetic about Carolina's songs as there is about the white-throated sparrow's; nor are they ever desultory like the lazy, rambling minstrelsy of the warbling vireo.

As a rule, Carolina pipes one strain for awhile, and sometimes a long while, before he begins another; yet I have heard him change

his tune four times in five minutes, as if he were playing at tiltmills with his voice. You never can tell when you have heard all the sounds he is capable of producing, for every now and then he will surprise you with a new combination. Recently, long as I have been on familiar terms with him, he has made me look several times in the bushes for a cardinal grossbeak, only to find his versatile self. I have a faint suspicion that he sometimes slyly plagiarizes the notes of other birds.

It would be impossible to represent all his quaint songs with letters and syllables. One of his favorite sentiments is "Che-wish-you! che-wish-you! che-wish-you!" usually repeated three times and then followed by a brief interval of silence. Sometimes he pipes, "Bish-yer! bish-yer!" which you have leave to translate as you please. I fancy he occasionally says, "I-wish-you-well-sir," which is certainly quite considerate, and displays an unselfish spirit; but when he exclaims "Chil-lil-le-lu!" rolling it quaintly from his garrulous tongue, one is at a loss to know if the statement is true or not. At rare intervals he falls into an ecstasy and chatters a continuous lay which is just as wonderful as it is devoid of musical quality.

No less quaint are the sites he chooses for

his nests—or, perhaps, I should change the gender of the pronouns and say *she* and *her*. One nest, which I found in a quiet glen, was placed in a hollow of a sapling's stem, the vestibule leading down to the home nursery being a pretty winding way, through which, by keen scrutiny, the eggs could be seen. Not more than four rods away another nest was discovered, the next spring, under the overarching sod of a streamlet's bank. In going to the nest the little mother would flit to a branch in the thorn bush above, then to a dead twig lying on the bank in front of her domicile; thence she would glance up the sandy slope to the nest. Holes in logs, old hats, nail boxes, all sorts of nooks and crevices about country houses are utilized for nesting places by the little builders.

It has been remarked that the Carolina wren is not so provincial as his name would indicate. The manuals say he is rare north of forty degrees north latitude; but south of that, to my certain knowledge, he ranges at his own sweet will, and it is doubtful if he will always remain within the boundary lines marked out for him by meddlesome naturalists. In my boyhood days he was one of our most familiar species in northeastern Ohio. Southwest of the

center of the State, where I now live, he is my constant comrade both summer and winter. On one of my jaunts, during a recent spring, along the Ohio River, below Cincinnati, no species was seen more frequently.

But that is not all. My bird mania drove me in the spring of 1894 to the Gulf States—Louisiana, Mississippi, Alabama, and Georgia. Having "stop-over" at Chattanooga, Tenn., I walked out, early one morning, toward the suburbs, and the first song I heard was that of Carolina, ringing like a bugle beneath the very shadow of Lookout Mountain, stirring memories of historic battles and valiant deeds. At many stations on my journey southward his rollicksome roundelays rang through the car window, and when I reached New Orleans not a jaunt was taken to the suburbs or the country where he was not heard piping at my elbow. On a fair November day I heard him singing lustily in the suburbs of Montgomery, Ala., and a few days later he was seen in the neighborhood of Pensacola, Fla., although here he was unaccountably shy and reticent. He really seemed to be ubiquitous.

Yes, ubiquitous; for, while some species select suburbs and country homesteads for habitats, and others seek wild and sequestered places,

Carolina makes himself equally at home almost everywhere. In Audubon Park, New Orleans, frequented by many loiterers and picnickers, he lives a jolly life, rolling his loud minstrelsy through the conservatory of plants and flowers until the echoes dance. He also loves the cemeteries on the outskirts of the city, where his songs are anything but funereal. One day in April I found a wren's nest in one of the marble vaults. You are to remember that the dead in the Crescent City are not buried under ground, but are placed in vaults erected on the surface, making a cemetery look like a village of small marble cottages. Behind a cross of artificial flowers, gleaming like silver in one of the vaults, the wren's nest was placed. The birds entered the recess through the interstices of an iron door. Had they not been so gay one might have thought their tastes rather sepulchral.

But here is an odd characteristic of this species. While some individuals are sociable, seeking proximity to man, others seem disposed to make recluses of themselves. My rambles in the South took me to some very lonely, out-of-the-way places. No matter; Carolina was at hand. I plunged into what seemed to be interminable forests, dark and dank, keeping a watchful eye on the sun, lest I should lose

my bearings; there was my little, ever-present friend. From far out in the inaccessible swamps —at least, I had not the courage to wade into them more than a rod or two—Carolina's lay came swinging merrily all day long. At Pass Christian, a famous summering and wintering place for that part of the South, Carolina mingled his song with the solemn swash of the waters of the Mexican Gulf; and, with a little touch of fancy and sentiment, one might say that the sigh of the sea and the song of the bird made pleasant concord by very contrast.

He is not a shy bird, even in his most sequestered haunts—that is, when he does not choose to be, for Carolina is somewhat capricious—but he will come close to you, eye you inquiringly, utter his warning or complaining call, perhaps pass a joke about your tramplike appearance, and then go off about his business, expecting you to go about yours. In casting around for an apt sobriquet for this engaging bird, I have decided that he is deserving of the title of "High Priest of Everywhere."

IF BIRDS COULD TALK.

Now that spring has come, the birds are singing their sweetest carols, giving free opera festivals in grove and meadow, and many of them are building cozy nests in the grass and bushes. Of course, in pleasant weather the boys and girls can not stay indoors, or even in town, but will want to ramble out through the beckoning country. Perhaps they will find some birds' nests.

What do you suppose the feathered owners would say if they could talk? But they *can* talk, only we do not understand their dialect, for they chatter and chirp bird talk and not English. What do you think that song sparrow says as he flits about so uneasily? We may readily imagine.

"Don't rob my nest in the grass, please," is what he means by his pitiful chirping. "Those eggs are my treasures, and I think as much of them as you do of your new marbles, and more, because they will become little spar-

row children by and by if you don't harm them. Would you like it if some bad boy were to break into your house and steal all your marbles and other toys? No, you wouldn't! Then think how I should feel if you should rob my nest of its pretty eggs. Remember the golden rule when you find a bird's nest."

And so you say kindly: "Don't fret, little sparrow; I won't even touch your pretty eggs. Good-by."

Just listen to his song as you hurry away from the place. He seems to trill: "Go-od-by-y, my dear. You're the ki-ind of bo-oy I like. Come again and hear me sing when I'm not so busy."

You walk on a little farther until you reach the meadow, where your ears are greeted with the *tinkle-tinkle-te-tinkle* of the bobolinks as they wheel in the air. But one of them stops his song, and begins to cry, "Chack! chack!" quite uneasily.

Ah! yes, there is a nest in the grass, cozily hidden and roofed over, and as the mother bobolink springs up, you see that there are half a dozen featherless baby birds in the dainty nursery. And now what do you think those parent birds are saying? Let us translate their appeal into English:

"You wouldn't be so cruel, so hard-hearted as to hurt or kill our pretty children, would you? It would break our hearts. Birds, you must know, have hearts as well as people, and birds love their children, too. They wouldn't take such good care of 'em if they didn't. Now, how would your mamma and papa feel if some great giant, a hundred times as big and strong as they are, would come along and pick you up in his hands and carry you off? Wouldn't they be heartbroken? And you wouldn't like it, either—to be kidnaped in that way. So just put yourselves in our place, and we don't think you will ever hurt young birds."

You hurry away without touching the open-mouthed brood in the grass, and as you stalk along you notice a red-headed woodpecker scudding up a fence stake. See him hitch along his promenade until he reaches the top, where he perches and looks around in a wise way like a feathered sage, swinging his head back and forth like a pump handle, and calling, "Ktr-r! ktr-r-r!" And what is the sermon that this red-headed preacher delivers? Listen!

"I'm glad you don't carry a slung shot, my lad. A slung shot is a bad thing for us birds. We like to live as well as you do, and we kill

a great many insects that would destroy the grain and fruit; and what would you think if you couldn't have any more apples and peaches and berries for sauce? But, then, a slung shot often only wounds a bird, breaking his wing or leg or bruising his body. There was my brother, poor fellow! One day a bad boy broke his wing with a stone, so that he—my brother, not the bad boy—couldn't fly at all. He couldn't move from place to place except by hopping along on the ground, and so he couldn't get enough food to keep him alive. He grew weaker and weaker day by day. Oh, how he suffered! It makes me cry to think of it. At last he couldn't move about at all any more, and he just starved to death by degrees. How would boys like to be served that way, eh? Suppose some strong man should throw a big rock against one of their legs and break it! Well, don't you think a bird suffers pain just as folks do? So, good-by. Never hurl stones at birds with a slung shot."

After three such sermons from the feathered preachers, we are quite certain that you will never injure the birds or rob their nests.

. . . . . .

And now, young friends, I must do as my old grandfather was wont to do when he came

from another State to visit us, his children and grandchildren. He would keep on talking gayly and pleasantly until the very moment of his departure had come, when he would suddenly, and without a word of warning, spring to his feet, pass rapidly around the circle of astonished friends, grasp them by the hands, bid them an unspoken farewell, and then hurry away, wiping a tear from the corner of his eye. He never prolonged the sadness of his leave-taking. The dear old man's example is the one I shall follow, and bid you an abrupt but none the less loving adieu; and while I say good-by without ceremony, I confess frankly I do so with genuine regret, as if parting from friends of long acquaintance.

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